State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES
Northern District

WATERMASTER SERVICE IN NORTHERN CALIFORNIA

1979 Season

DECEMBER 1980

FOREWORD

This report describes the watermaster service provided by the Department of Water Resources to areas in Northern California during the 1979 irrigation season. Authority for its preparation is stated in the California Water Code, Division 2, Part 4, Chapter 7.

Data are presented in two parts: the first gives general information about the water rights, water supply service areas, and watermaster duties. The second describes the 21 active service areas, 19 in the Department's Northern District and 2 in the Central District. Each of these 21 sections gives information on the general area, the basis of watermaster service, water supply, method of distribution, 1979 distribution, and other information.

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State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES

NORTHERN DISTRICT

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Big Springs	Shasta River	131-133			17,17e	137,147
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Butte Creek	Butte Creek	27,30	9,10	30,31	5	29
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Cedar Creek	Cow Creek	34			6,6b	35,39
Cedar Creek	S.F. Pit River				18	155
Cedar Creek	Surprise Valley	167,176	41,46	168,171	19,19e	177,187
Center Canal	S.F. Pit River				18	155
Cliff Lake	Shackleford Creek	127			16	129
Clover Creek	Cow Creek	33,34			6,6c	35,41
S. Clover Creek	Cow Creek				6c	41
Cold Stream	M.F. Feather River	77			13,13e	79,84

* Big Sage Reservoir serves Hot Springs Valley I.D., upstream of Big Valley, but has considerable effect on the water supply to Big Valley.

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Cooks Creek	Indian Creek	66			11,11b	67,71
Cottonwood Crek	N.F. Cottonwood Cr.	93			14	94
N.F. Cottonwood Cr.	N.F. Cottonwood Cr.	93	19	95	14	94
Cottonwood Creek	N.F. Pit River	97,99	20,22	98,100	15,15a	107,109
Cottonwood Creek	Surprise Valley	176	41,49	168,172	19,19g	177,199
Couch Creek	N.F. Pit River				15e	117
Cow Creek	Cow Creek	33			6,6e	37,41
N. Cow Creek	Cow Creek	33,34	12	34	6	35
S. Cow Creek	Cow Creek				6	35
Dale Creek	Shasta River	131			17,17a	137,139
Davis Creek	N.F. Pit River	97,99	20,23	98,101	15,15b	107,111
DeSabla Reservoir	Butte Creek	27				
Deep Creek	Surprise Valley	167,176	41	169	19,19f	177,189
N. Deep Creek	Surprise Valley	176	47	172	19,19f	177,189
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Dicen Slough	M.F. Feather River				13,13b	79,81
Digger Creek	Digger Creek	43	13	46	7	45
Dill Slough	Susan River	201			20,20c	205,211
Doby Creek	N.F. Cottonwood Cr.				14	94
Dorris Reservoir	S.F. Pit River				18a	157
Duck Lake Creek	French Creek	51,54	14	54	9	53
Dwinnell Reservoir	Shasta River	131,133	35	136	17,17d	137,145
Eagle Creek	N.F. Cottonwood Cr.				14	94
Eagle Creek	Surprise Valley	167,176	41,52	168,174	19,19j	177,197
Eagle Lake	Susan River	203			20d	213
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E. Branch Soldier Cr.	Surprise Valley (See Soldier Creek)					
East Channel	M.F. Feather River (See Little Last Chance and Smithneck Creeks)				13,13b 13i	79,81, 88
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Elesian Creek	Susan River	201-202			20,20b	205,209
Emerson Creek	Surprise Valley	167,176	53	174	19,19k	177,199
Evans Creek	Shackleford Creek	127				
Eyster Slough	Surprise Valley				19j	197
Fall River	Fall River	47			8	49
Feather River						
Middle Fork	M.F. Feather River	77,78	18	91	13,g,h,i,	79,86-88
West Branch	Butte Creek (Import)	27				
Fitzhugh Creek	S.F. Pit River	153,154	39	165	18,18b	155,159
N.F. Fitzhugh Cr.	S.F. Pit River	153			18,18b	155,159
S.F. Fitzhugh Cr.	S.F. Pit River	153			18,18b	155,159
M.F. Fitzhugh Cr.	S.F. Pit River				18b	159
Fletcher Creek	M.F. Feather River	77,78			13,13k	79,90
Franklin Creek	N.F. Pit River	97,99	20,25	98,102	15,15d	107,115
French Creek	French Creek	51,54	14		9	53
North Fork	French Creek	51,54			9	53
French Reservoir	S.F. Pit River	153			18,18b	155,159
Frenchman Reservoir	M.F. Feather River	77				
Gleason Creek	N.F. Pit River		20	98	15,15g	107,121
Gold Run Creek	Susan River	201-203	55	218	20,20a	205,207
Hahn Channel	Hat Creek				10	59
Hamlin Creek	M.F. Feather River	78			13,13j	79,89
Hamlin Slough	Butte Creek	27			5	29
Hartson Slough	Susan River	201,204			20,20c	205,211
Hat Creek	Hat Creek	57,58	15	58	10-10b	59-63
Hendricks Canal (Also known as Toadtown Canal, Import)	Butte Creek	27	11	31		
Hills Creek	Susan River	201,203			20a	207
Hog Flat Reservoir	Susan River	202,203	58	220		

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Middle Channel	M.F. Feather River (See Smithneck Creek)					
M.F. Feather River	M.F. Feather River (See Feather River)					
M.F. Fitzhugh Creek	S.F. Pit River (See Fitzhugh Creek)				18b	159
Mile Creek	N.F. Pit River				15f	119
Milkhouse Creek	M.F. Feather River				13j	89
Mill Creek	Cow Creek				6a,6b	37,39
Mill Creek	Shackleford Creek	127			16	129
Mill Creek	S.F. Pit River	153			18	155
Mill Creek	Surprise Valley	167,176	41,43	168,169	19,19b	177,181
Miller Creek	M.F. Feather River				13,13j	79,89
Miners Creek	French Creek	51,54			9	53
Moon Creek	N.F. Cottonwood Creek	93			14	94
Morris Slough	M.F. Feather River				13,13b	79,81
Murphy-Estep Branch	Cow Creek				6a	37
Negro Creek	N.F. Pit River				15h	123
New Pine Creek	N.F. Pit River	97,99	20,21	98,100	15,15a	107,109
North Canyon Creek	Indian Creek				11a	69
North Channel	N.F. Pit River (See Franklin Creek)				15d	115
North Channel	M.F. Feather River (See Little Last Chance Cr.)				13a,13b	80,81
North Cow Creek	Cow Creek	33,34	12	34	6	35
North Deep Creek	Surprise Valley (See Deep Creek)					
N.F. Cottonwood Cr.	N.F. Cottonwood Creek (See Cottonwood Creek)					
N.F. Davis Creek	N.F. Pit River (See Davis Creek)				15b	111
N.F. Feather River	Indian Creek	65			11,11b	67,71
N.F. French Creek	French Creek	51,54			9	53
N.F. Pit River	N.F. Pit River (See Pit River)					
Oak Run Creek	Cow Creek	33,34			6,6b	35,39
Old Channel	Hat Creek				10b	63
Old Channel	Surprise Valley				19j	197
Old Channel	Susan River	201,203			20a	207
Onion Creek	M.F. Feather River	77			13e	84

Watermaster Service Areas in Northern California

Source Name	Service Area	References: Text Page	Flow Data: Table	Flow Data: Page	Map: Figure	Map: Page
Owl Creek	Surprise Valley	167,176	41,50	169,174	19,19h	177,193
Parker Creek	Susan River	201-203			20,20b	205,209
Parker Creek	N.F. Pit River	97,99	20,29,30	98,104	15,g&h	107,121,123
Parks Creek	Shasta River	131-133	34	135	17,17c	137,143
Payne Reservoir	S.F. Pit River	153			18,18b	155,159
Paynes Lake Creek	French Creek	51			9	53
Perry Creek	M.F. Feather River				13e,13f	84,85
Peters Creek	Indian Creek				11,11b	67,71
Pine Creek	S.F. Pit River	153	40	165	18	155
Pine Creek	Surprise Valley	167,176	41,45	168,170	19,19d	177,185
Pine Creek Reservoir	S.F. Pit River	153			18	155
Pine Creek, New	N.F. Pit River	(See New Pine Creek)				
Pit River	Big Valley	17-19	7	19	3	21
North Fork	N.F. Pit River	97,99	20,28	98,103	15,c,f,g,i	107,113,119,121,125
South Fork	S.F. Pit River	153,154	37	164	18,c&d	155,161,162
Piute Creek	Susan River	201-203			20,20e	205,215
Plum Canyon Res.	N.F. Pit River				15h	123
Plum Creek	N.F. Pit River				15h	123
Porter Reservoir	N.F. Pit River				15h	123
Radar Creek	Surprise Valley	167,176	41,51	168,173	19,19i	177,195
Rainbow Lake	N.F. Cottonwood Cr.				14	94
Rising River	Hat Creek	57			10a	61
Roberts Reservoir	Big Valley	17-19			3	21
Rock Canyon Creek	Digger Creek				7	45
Round Valley Res.	Indian Creek				11,11a	67,69
Rush Creek	Ash Creek	13,16			2	15
Rutherford Creek	Surprise Valley				19,19b	177;181
Shackleford Creek	Shackleford Creek	127			16	129
Shasta River	Shasta River	131-133	32,33,36	134,135,136	17,a,d,f,g	137,139;145,149,151

Watermaster Service Areas in Northern California

Source Name	Service Area	References				
		Text	Flow Data		Map	
		Page	Table	Page	Figure	Page
Turner Canyon	M.F. Feather River				13,13j	79,89
Turner Creek	M.F. Feather River	78			13j	89
Webber Creek	M.F. Feather River	77,78			13,13e	79,84
W. Br. Feather River	Butte Creek, Import	(See Feather River)				
W. Fork Parker Cr.	Susan River	(See Parker Creek)				
West Channel	M. F. Feather River	(See Smithneck Creek)			13d	83
West Side Canal	M.F. Feather River	77,78			13,h&i	79,87,88
West Side Canal	S. F. Pit River				18,18d	155,162
West Valley Creek	S.F. Pit River	153	38	164		
West Valley Res.	S.F. Pit River	153,154	38	164	18,c,e	155,161,163
West Valley Res.	Big Valley	17,18				
Whitehead Slough	Susan River				20c	211
Wildcat Creek	Cow Creek				6c	41
Willow Creek	Ash Creek	13,16			2	15
Willow Creek	Susan River	201,203	57	219	20,20d	205,213
Willow Creek	Willow Creek	223			21	225
Windham Creek	Cow Creek				6c	41
Wolf Creek	Indian Creek	65,66			11,11a	67,69

CONVERSION FACTORS

Quantity	To Convert from Metric Unit	To Customary Unit	Multiply Metric Unit By	To Convert to Metric Unit Multiply Customary Unit By
Length	millimetres (mm)	inches (in)	0.03937	25.4
	centimetres (cm) for snow depth	inches (in)	0.3937	2.54
	metres (m)	feet (ft)	3.2808	0.3048
	kilometres (km)	miles (mi)	0.62139	1.6093
Area	square millimetres (mm^2)	square inches (in^2)	0.00155	645.16
	square metres (m^2)	square feet (ft^2)	10.764	0.092903
	hectares (ha)	acres (ac)	2.4710	0.40469
	square kilometres (km^2)	square miles (mi^2)	0.3861	2.590
Volume	litres (L)	gallons (gal)	0.26417	3.7854
	megalitres	million gallons (10^6 gal)	0.26417	3.7854
	cubic metres (m^3)	cubic feet (ft^3)	35.315	0.028317
	cubic metres (m^3)	cubic yards (yd^3)	1.308	0.76455
	cubic dekametres (dam^3)	acre-feet (ac-ft)	0.8107	1.2335
Flow	cubic metres per second (m^3/s)	cubic feet per second (ft^3/s)	35.315	0.028317
	litres per minute (L/min)	gallons per minute (gal/min)	0.26417	3.7854
	litres per day (L/day)	gallons per day (gal/day)	0.26417	3.7854
	megalitres per day (ML/day)	million gallons per day (mgd)	0.26417	3.7854
	cubic dekametres per day (dam^3/day)	acre-feet per day (ac-ft/day)	0.8107	1.2335
Mass	kilograms (kg)	pounds (lb)	2.2046	0.45359
	megagrams (Mg)	tons (short, 2,000 lb)	1.1023	0.90718
Velocity	metres per second (m/s)	feet per second (ft/s)	3.2808	0.3048
Power	kilowatts (kW)	horsepower (hp)	1.3405	0.746
Pressure	kilopascals (kPa)	pounds per square inch (psi)	0.14505	6.8948
	kilopascals (kPa)	feet head of water	0.33456	2.989
Specific Capacity	litres per minute per metre drawdown	gallons per minute per foot drawdown	0.08052	12.419
Concentration	milligrams per litre (mg/L)	parts per million (ppm)	1.0	1.0
Electrical Conductivity	microsiemens per centimetre (uS/cm)	micromhos per centimetre	1.0	1.0
Temperature	degrees Celsius (°C)	degrees Fahrenheit (°F)	(1.8 × °C)+32	(°F−32)/1.8

1979

DECREED WATER RIGHTS

	Service Area	Number of Decreed Water Users	Total Decreed Water Rights m^3/sec	Total Decreed Water Rights ft^3/s
1.	Ash Creek	59	3.501	123.65
2.	Big Valley	52	6.542	231.03
3.	Burney Creek	11	.937	33.09
4.	Butte Creek	40	11.958	422.30
5.	Cow Creek	86	1.596	56.367
6.	Digger Creek	79	.657	23.225
7.	Fall River	2 1/		
8.	French Creek	36	.854	30.17
9.	Goose Creek	1 1/		
10.	Hat Creek	57	3.838	135.545
11.	Indian Creek	47	3.738	96.715
12.	Juniper Creek	3 1/		
13.	M. F. Feather River	105	10.536	372.079
14.	N. F. Cottonwood Creek	13	.858	30.30
15.	N. F. Pit River	101	6.075	214.195
16.	Shackleford Creek	45	1.832	64.73
17.	Shasta River	130	17.055	602.292
18.	S. F. Pit River	39	9.938	355.150
19.	Surprise Valley	174	9.458	334.02
20.	Susan River	204	9.972	352.182
21.	Willow Creek	3		2/

1/ Does not include Pacific Gas and Electric Company, who is a participant.

2/ Water based on percentage of flow in Willow Creek.

INTRODUCTION

Purpose and Benefits

The primary purpose of watermaster service is to distribute water in accordance with established water rights. This is accomplished by apportioning to the rightful users the available supplies in stream which have had water right determinations.

Distribution of water in watermaster service areas is a continuing statutory function of the Department of Water Resources as provided in Part 4 of Division 2 of the California Water Code.

A major benefit of watermaster service to water users and the State is that court litigation and physical violence, which in past years occurred quite frequently, are essentially eliminated.

Under watermaster service each water right owner is assured that his rights are being protected without his having to take legal action against other users. Another important benefit results from increased use of available supplies through reduction of waste.

Because both the water right owners and the State receive benefits from watermaster service, the costs of performing the service are shared. The State general tax fund pays half the cost of operating each service area. The water right owners in the service area pay the other half. Individual users' shares are determined in accordance with Article 3 of Chapter 7 of the above-mentioned Part 4 of Division 2 of the Water Code.

Determination of Water Rights

Almost all of the streams under State watermaster service have had their water rights defined by the courts under one of three adjudication procedures. These adjudications establish each owner's rights as to allowable rate of diversion, season of use, point of diversion, and place of use. They also establish priorities whereby each owner's rights are ranked in relation to the rights of all other decreed owners. Under this system all rights of any one priority must be fully satisfied before water can be diverted under any lower priority rights. The determinations of the courts are set forth by entering judgments, commonly called decrees.

Water rights determinations necessary for establishing watermaster service areas may be accomplished by "statutory adjudication", "court adjudication", "court reference", permit of license to appropriate, or agreement.

Statutory Adjudications

The California Water Code (Sections 2500-2900) prescribes a procedure whereby water users of any stream may petition the State Water Resources Control Board, Division of Water Rights, to make a legal determination of all water rights on that stream. If the Board finds that such a determination is in the best public interest, it proceeds with a statutory adjudication. This adjudication ultimately results in a court decree which defines all water rights on the stream.

Court Adjudications

A less extensive method of defining water rights is the "court adjudication" procedure. This type of adjudication results when two or more parties involved in a water rights dispute seek a solution to their problem under civil law. A decision

handed down in such a civil action determines only the water rights of the parties involved in the action and therefore does not necessarily define all water rights on the stream As a result, serious conflicts sometimes arise between decreed water right owners and persons claiming riparian or appropriative rights which were not specified in the decree.

Court Reference

The "court reference" type of adjudication arises when a civil action as discussed, is referred to the State Water Resources Control Board for a determination under authority contained in Sections 2000-2076 of the Water Code. The Board's report becomes the basis of the court's decision. As in court adjudications, a court reference determines only the water rights of the parties involved in the action. The number of decreed owners and amounts of water rights for each service area are shown on page xv. Table 1 lists Superior Court decrees and their types.

Watermaster Service Areas

Formation

Watermaster service is provided in areas where the rights have been defined by the Superior Court of the County, or by agreement, and where an unbiased qualified person is needed to properly apportion the available water according to the established rights. The Director of Water Resources creates watermaster service areas where these conditions exist, following either a request by the users or an order by the Superior Court.

The first watermaster service areas were created in September 1929. Prior to 1929, some watermaster service was provided in accordance with the Water Commission Act of 1913. There are now about 50 streams in Northern California which are under State watermaster service. The newest service areas were created in 1975.

The counties and principal water sources of the various service areas in Northern California are listed in Table 2.

Of these 21 areas, 19 are in the Department's Northern District and 2 are in the Central District. In 1979, two service areas in the Northern District, Seiad Creek in Siskiyou County and Pine Creek in Butte and Tehama Counties, were inactive.

Description of Region

The service areas are primarily in the mountainous northeastern part of the State where the growing season varies between about 100 and 140 days. Meadow hay and alfalfa are the principal crops under irrigation, although a considerable amount of land is used exclusively for pasturing livestock. Most irrigation is accomplished by gravity systems, with water users diverting directly from the streams at one or more diversion points. However, pumped diversions and sprinkler irrigation systems are becoming popular in some areas.

A map of this region showing the 22 service areas is presented in Figure 1.

Watermaster Responsibilities

Authority

To assure the proper distribution of water within his service area, each watermaster must ascertain the amount of water available and distribute it both by amount and priority in accordance with establish water rights.

TABLE 1

SUPERIOR COURT DECREES REGULATING WATER DISTRIBUTION

Watermaster Service Area	Name of Stream System	County	Decree Number	Decree Date	Decree Type*	Date Watermaster Service Area Created	Remarks
Ash Creek	Ash Creek	Modoc ** and Lassen	3670	10-27-47	CR	4-03-59	Included as part of Big Valley servce area 1949 through 1958.
Big Valley	Pit River	Modoc ** and Lassen	6395	2-17-59	S	11-13-34	Service provided in accordance with recorded agreement in 1934. Service area operated under recorded agreement 1935 through 1958, and under decree since 1959.
Burney Creek	Burney Creek	Shasta	5111	1-30-26	CR	9-11-29	Service provided in accordance with decree since 1926.
Butte Creek	Butte Creek	Butte	18917	11-06-42	S	1-07-43	
Cow Creek	North Cow Creek	Shasta	5804	4-29-32	CR	10-17-32	
	Oak Run Creek	Shasta	5701	7-22-32	CR	10-17-32	
	Clover Creek	Shasta	6904	10-04-37	CR	1-21-38	Included in Cow Creek service area.
Digger Creek	Digger Creek	Shasta and Tehama **	2213	8-12-99	C	6-11-64	
			3214	5-27-13	C		
			3327	10-16-17	C		
			4570	2-24-27	C		
French Creek	French Creek	Siskiyou	14478	7-01-58	CR	11-19-68	
Hat Creek	Hat Creek	Shasta	5724	5-14-24	CR	9-11-29	Service provided in accordance with decree since 1924.
			7858	10-07-35	CR		
Indian Creek	Indian Creek	Plumas	4185	5-19-50	S	2-19-51	
Middle Fork Feather River	Middle Fork Feather River	Plumas ** and Sierra	3095	1-22-40	S	3-29-40	
North Fork Cottonwood Cr.	North Fork Cottonwood Creek	Shasta	5479	6-09-20	CR	9-11-29	Service provided intermittently in accordance with the decree since 1924.
North Fork Pit River	North Fork Pit River and all tributaries except Franklin Creek	Modoc	4074	12-14-39	S	12-18-39	All stream systems consolidated into North Fork Pit River service area 12-13-40.
	New Pine Creek	Modoc	2821	6-14-32	CR	6-22-32	
	Davis Creek	Modoc	2782	6-30-32	CR	7-13-32	
	Franklin Creek	Modoc	3118	9-08-33	CR	9-14-33	
	Cottonwood Creek	Modoc	2344	5-03-40	CR	12-13-40	
Seiad Creek	Seiad Creek	Siskiyou	13774	4-10-50	S	11-06-50	Service provided in accordance with decree by order of the court in 1950. Service suspended since September 1964.
Shackleford Creek	Shackleford Creek	Siskiyou	13775	4-10-50	S	11-06-50	Service provided in accordance with decree by order of the court in 1950.
Shasta River	Shasta River	Siskiyou	7035	12-29-32	S	3-01-33	
South Fork Pit River	South Fork Pit River	Modoc ** and Lassen	3273	10-30-34	CR	12-31-34	Service includes operation of West Valley Reservoir (built subsequent to issuance of decree) in accordance with the demands of South Fork Irrigation District.
	Pine Creek	Modoc	Agreement	11-22-33		1-12-35	
Surprise Valley	Cedar Creek	Modoc	1206	5-22-01	C	9-11-29	All adjudicated stream systems in Surprise Valley were consolidated into the Surprise Valley service area on 1-10-39. Bidwell Creek was added on March 16, 1960. Service started on Cedar Creek in 1926 in accordance with the decree. Service was provided on Soldier and Owl Creeks in 1929 in accordance with the decrees by order of the court.
			2343	2-15-23	C		
	Soldier Creek	Modoc	2405	11-28-28	CR	9-11-29	
	Owl Creek	Modoc	2410	4-29-29	CR	9-11-29	
	Emerson Creek	Modoc	2840	3-25-30	CR	4-02-03	
	Mill Creek	Modoc	3024	12-19-31	CR	12-30-31	
	Deer Creek	Modoc	3101	1-25-34	CR	12-29-34	
	Pine Creek	Modoc	3391	12-07-36	CR	1-13-37	
	Rader Creek	Modoc	3626	6-04-37	CR	6-12-37	
	Eagle Creek	Modoc	2304	4-05-26	C	1-10-39	
			3284	11-05-37	CR		
	Bidwell Creek	Modoc	6420	1-13-60	S	3-16-60	
Susan River	Susan River	Lassen	4573	4-18-40	CR	11-10-41	
	Baxter Creek	Lassen	8174	12-15-55	S	2-16-56	
	Parker Creek	Lassen	8175	12-15-55	S	2-16-56	

* Explanation of type of decree:

C --Court adjudication (court makes determination from evidence submitted - no report of referee)
CR--Court adjudication (referred to State Water Resources Control Board for investigation and report)
S---Statutory adjudication (State Water Resources Control Board is petitioned by water users to make a determination of all water rights on a stream system)

** Decree entered by the Superior Court of this county

TABLE 2

WATERMASTER SERVICE AREAS AND STREAM SYSTEMS

Service Area	County	Principal Water Sources: MAJOR STREAM and Tributaries[a]	Principal Water Sources: Reservoirs and Nontributary Streams
Ash Creek	Lassen, Modoc	ASH CREEK	
Big Valley	Lassen, Modoc	PIT RIVER	Roberts Reservoir
Burney Creek	Shasta	BURNEY CREEK	
Butte Creek	Butte	BUTTE CREEK	W. Branch Feather River
Cow Creek	Shasta	COW CREEK[b] N. Cow, Clover, Oak Run Creeks	
Digger Creek	Shasta, Tehama	DIGGER CREEK	
Fall River	Shasta	FALL RIVER	
French Creek	Siskiyou	FRENCH CREEK Miners Creek	Duck Lake, Paynes Lake
Goose Creek	Shasta	GOOSE CREEK	Lake Margaret
Hat Creek	Shasta	HAT CREEK	
Indian Creek	Plumas	INDIAN CREEK Lights Creek, Wolf Creek	
Juniper Creek	Lassen	JUNIPER CREEK	Iverson Reservoir
Middle Fork Feather River	Plumas, Sierra	M. FORK FEATHER RIVER Little Last Chance, Smithneck, Webber and Fletcher Creeks; Spring Channels, Westside Canal	Little Truckee River
N. Fork Cottonwood Creek	Shasta	N. FORK COTTONWOOD CREEK	Rainbow Lake
North Fork Pit River	Modoc	N. FORK PIT RIVER Parker Creek	Pine, Cottonwood, Davis Creeks
Shackleford Creek	Siskiyou	SHACKLEFORD CREEK Mill Creek	Campbell and Cliff Lakes
Shasta River	Siskiyou	SHASTA RIVER Little Shasta River	Dwinnell Reservoir (Lake Shastina)
South Fork Pit River	Modoc	S. FORK PIT RIVER Pine and Fitzhugh Creeks	West Valley Reservoir
Surprise Valley	Modoc	NONE (All creeks listed at right, are unconnected)	Bidwell, Mill, Soldier, Pine, Cedar, Deep, Owl, Rader, Eagle and Emerson Creeks
Susan River	Lassen	SUSAN RIVER Willow Creek	Lake Leavitt, Hog Flat, McCoy Flat Reservoirs; Baxter and Parker Creeks
Willow Creek	Siskiyou	WILLOW CREEK	

a/ Major tributaries only. A complete listing is given in "Index to Water Sources" page vi.

b/ Cow Creek proper not in service area.

To accomplish his responsibility, the watermaster is provided authority both by the Water Code and by provisions of pertinent court decrees or voluntary agreements to physically regulate the various streams in the service area. He is further authorized to supervise the design, construction, operation, and maintenance of diversion dams, headgates, and measuring devices.

Each watermaster supervised water distribution at approximately 100 to 200 diversions in one or more service areas. The need for frequently checking and regulating these diversion points increases substantially in years of short water supply.

Control Devices

Permanent measurement and control devices, which the State requires (Water Code Sections 4100-4104) at each owner's main point of diversion, are constructed by the water users under supervision of the watermaster. Installation of accurate, easily set, and lockable structures is a continuing objective of watermaster service, since once they are built, conflicts among water users almost always stop. Also, the watermaster's ability to check and set each diversion regularly is greatly facilitated by good structures.

Interpretation of Decrees

The watermaster is often called upon to make immediate field or on-the-spot interpretations of various court decrees, agreements, etc. Since most of these documents were written more then 30 years ago, many situations have developed that were not initially considered. Therefore, the watermaster must use sound, careful, and practical judgment in attempting to reach workable solutions to water disputes. To accomplish this, he must possess a good understanding of California water rights law.

Water Supply

Water supply in the watermaster service areas is derived principally from unregulated runoff of small streams. Peak runoff, snowmelt in most cases, occurs in the spring, with relatively small streamflow occurring in the summer and early fall. Additional supplies from storage reservoirs and ground water pumping are used in some areas to supplement natural streamflow. However, State watermasters do not supervise the use of ground water in this part of the State.

In some service areas the water supply must be predicted in advance to determine the date watermastering will begin and, to some extent, the manpower needed. The Department's Bulletin 120 series, "Water Conditions in California", is used to assist in these predictions.

Precipitation

The streamflow available for distribution is affected by total precipitation, amount of snowpack, air temperature, and the amount of rainfall received during the irrigation season. The latter is particularly important in the upper Pit River-Surprise Valley areas, where about 25 to 30 percent of the annual precipitation occurs normally in April, May, and June. Spring storms, which are normally accompanied by relatively cool temperatures, materially affect both the water supply and the demand. Temperatures in the spring affect the demand for water and the manner in which snowmelt runoff occurs. A hot, dry spring depletes the water supply very early, even in years of normal snowpack. A cold, wet spring can extend the supply well into the irrigation season, but cold temperatures retard the growth of crops and are not necessarily desirable.

Data collected at representative snow courses showing the snowpack as of April 1, 1979, on all courses and the snowpack on May 1 at selected courses, are presented in Table 4. This information was obtained from the Department's basic data files.

Table 3 reports the quantity of precipitation at selected stations in the service areas during the 1978-79 water year. The seasonal precipitation gives an indication of the related water supply available for distribution, and provides a basis for comparing the current year's supply with a long-term average.

Streamflow

The general water supply available for diversion within each watermaster area is determined from stream gaging stations placed at key locations in the main stream channels. Several major stations are installed and maintained by the U. S. Geological Survey as part

Station	County	October (mm)	October (in)	November (mm)	November (in)	December (mm)	December (in)	January (mm)	January (in)	February (mm)	February (in)	March (mm)	March (in)
Fort Jones Ranger Station	Siskiyou	0.0 41	0.00 1.62	25 77	1.00 3.02	22 111	0.88 4.37	50 117	1.98 4.60	98 64	3.86 2.53	24 44	0.93 1.75
Happy Camp Ranger Station	Siskiyou	0.0 110	0.00 4.33	68 216	2.66 8.52	64 285	2.51 11.24	131 308	5.16 12.13	311 186	12.24 7.32	55 155	2.17 6.09
Yreka	Siskiyou	0.0 38	0.00 1.48	16 60	0.62 2.38	21 100	0.84 3.92	61 89	2.42 3.52	63 53	2.47 2.07	16 36	0.63 1.43
Redding Fire Station No. 2*	Shasta	0.0 58	0.00 2.28	74 136	2.92 5.35	4.3 189	0.17 7.43	260 213	10.23 8.38	261 149	10.26 5.87	135 116	5.32 4.56
Hat Creek Power House No. 1	Shasta	0.0 33	0.00 1.30	35 56	1.39 2.19	35 83	1.38 3.28	65 80	2.56 3.16	159 65	6.27 2.55	45 50	1.77 1.98
Lookout 3WSW	Lassen	0.0 26	0.00 1.02	34 74	1.33 2.92	19 96	0.74 3.76	35 102	1.37 4.01	126 56	4.97 2.21	22 53	0.86 2.07
Lakeview, Oregon	Lake	0.0 34	0.00 1.32	18 45	0.69 1.79	21 55	0.83 2.17	77 58	3.04 2.29	49 38	1.92 1.51	22 34	0.85 1.34
Alturas Ranger Station	Modoc	0.0 28	0.00 1.09	14 39	0.57 1.52	17 42	0.67 1.65	22 43	0.87 1.71	35 32	1.37 1.25	39 30	1.55 1.19
Jess Valley	Modoc	0.0 35	0.00 1.37	49 49	1.93 1.91	21 52	0.84 2.05	48 50	1.90 1.95	58 43	2.28 1.71	43 43	1.70 1.69
Cedarville	Modoc	0.0 32	0.00 1.27	28 43	1.10 1.69	25 70	0.98 2.77	55 46	2.15 1.82	35 33	1.38 1.31	42 30	1.64 1.18
Susanville Airport	Lassen	0.0 29	0.00 1.15	17 43	0.67 1.70	11 67	0.43 2.64	31 71	1.24 2.78	43 51	1.68 1.99	13 32	0.52 1.26
Greenville Ranger Station	Plumas	0.0 46	0.00 1.83	51 125	2.02 4.91	41 159	1.62 6.27	117 196	4.61 7.73	245 150	9.65 5.90	124 131	4.87 5.17
Sierraville Ranger Station	Sierra	T 54	T 2.14	30 92	1.18 3.62	34 124	1.34 4.89	118 135	4.63 5.31	115 97	4.54 3.83	46 72	1.80 2.85
Vinton	Plumas	1.0 25	0.04 0.97	41 42	1.62 1.67	18 57	0.70 2.23	24 62	0.93 2.45	63 42	2.49 1.67	23 34	0.89 1.34

*Fire Station No. 2 location discontinued May 1979; Fire Station No. 4 location began May 1979.

of a Federal-State program for collection of year-round streamflow records. In addition, several stream gaging stations are installed and operated by the watermasters during the irrigation season to provide supplemental information. Also, water stage recorders are often installed by the watermaster in selected diversion ditches to further assist him in proper distribution of the various water right allotments.

Table 5 presents runoff data at selected stream gaging stations in or near the service areas.

TABLE 3

PRECIPITATION AT SELECTED STATIONS - 1978-79 SEASON
(in millimetres and inches)

April		May		June		July		August		September		Total		Percent of Mean
(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	
51	2.02	41	1.61	0.5	0.02	26	1.03	27	1.08	13	0.52	379	14.93	.68
25	0.99	26	1.01	20	0.80	8.6	0.34	11	0.43	9.1	0.36	554	21.82	
66	2.60	61	2.39	5.3	0.21	10	0.41	11	0.43	31	1.21	813	31.99	.56
74	2.91	51	2.00	23	0.92	11	0.43	8.9	0.35	18	0.69	1 446	56.93	
34	1.34	47	1.84	0.8	0.03	0.3	0.01	42	1.64	12	0.47	313	12.31	.65
22	0.87	25	0.98	23	0.90	7.9	0.31	14	0.56	10	0.41	478	18.83	
65	2.54	25	1.00	2.5	0.10	0.0	0.00	46	1.80	7.6	0.30	880	34.64	.89
50	1.99	27	1.06	13	0.52	3.3	0.13	9.7	0.38	20	0.77	983	38.72	
21	0.84	47	1.84	1.3	0.05	0.0	0.00	45	1.78	5.1	0.20	459	18.08	.95
35	1.36	32	1.25	26	1.01	5.8	0.23	6.9	0.27	10	0.40	482	18.98	
28	1.11	48	1.90	1.8	0.07	2.5	0.10	23	0.90	5.1	0.20	344	13.55	.63
40	1.59	29	1.13	28	1.12	5.8	0.23	15	0.59	18	0.71	543	21.36	
31	1.23	19	0.73	9.7	0.38	T	T	34	1.33	2.8	0.11	282	11.11	.69
28	1.10	44	1.73	43	1.70	4.8	0.19	9.4	0.37	13	0.50	407	16.01	
34	1.34	13	0.53	5.1	0.20	3.3	0.13	27	1.06	T	T	211	8.29	.62
25	1.00	38	1.49	34	1.34	7.4	0.29	10	0.41	8.4	0.33	337	13.27	
46	1.83	29	1.14	23	0.90	9.9	0.39	21	0.84	0.0	0.00	349	13.75	.77
42	1.65	57	2.25	49	1.93	8.6	0.34	12	0.47	14	0.55	454	17.87	
35	1.36	18	0.70	5.6	0.22	0.0	0.00	28	1.11	T	T	270	10.64	.75
25	0.97	29	1.15	28	1.11	8.4	0.33	7.4	0.29	7.9	0.31	361	14.20	
15	0.61	14	0.54	2.3	0.09	38	1.49	0.8	0.03	1.5	0.06	187	7.36	.51
19	0.73	20	0.77	20	0.77	5.8	0.23	3.8	0.15	8.1	0.32	368	14.49	
70	2.77	54	2.13	6.1	0.24	1.5	0.06	13	0.53	6.9	0.27	731	28.77	.75
71	2.78	41	1.61	21	0.83	6.6	0.26	10	0.40	15	0.59	972	38.28	
24	0.94	35	1.38	5.6	0.22	11	0.45	9.4	0.37	0.0	0.00	428	16.85	.62
43	1.70	34	1.35	17	0.67	7.4	0.29	6.4	0.25	9.9	0.39	693	27.29	
24	0.94	15	0.58	2.0	0.08	20	0.77	8.9	0.35	T	T	239	9.39	.68
23	0.90	25	0.97	18	0.72	7.9	0.31	6.1	0.24	7.1	0.28	349	13.75	

NOTE: Figures above line are for current season; below line are long-term averages.

TABLE 4

SNOWPACK AS OF APRIL 1 AND MAY 1, 1979, AT REPRESENTATIVE SNOW COURSES

Watermaster Service Areas (Grouped Geographically)*	Snow Courses* Relation to Each Group	Elevation (in metres)	Elevation (in feet)	WATER CONTENT OF SNOW							
				April 1 Average (in mm**)	April 1 Average (in inches)	April 1, 1979***			May 1, 1979		
						In mm**	In inches	In Percent of April 1 Average	In mm**	In inches	In Percent of April 1 Average
French Creek	Parks Creek	2 000	6,700	914	36.0	617	24.3	68			
Shackleford Creek	Middle Boulder No. 1	2 000	6,600	787	31.0	625	24.6	79	564	22.2	72
Shasta River	Little Shasta	1 900	6,200	508	20.0	287	11.3	56			
Ash Creek	Blue Lake	2 100	6,800	305	12.0	208	8.2	68			
Big Valley	Eagle Peak	2 200	7,200	381	15.0	376	14.8	99			
North Fork Pit River	Cedar Pass	2 200	7,100	432	17.0	424	16.7	98	498	19.6	115
South Fork Pit River	Adin Mountain	1 950	6,350	330	13.0	300	11.8	91	206	8.1	62
Surprise Valley											
Burney Creek	Thousand Lakes	2 000	6,500	965	38.0	787	31.0	82	660	26.0	68
Cow Creek	New Manzanita Lake	1 800	5,900	203	8.0	251	9.9	124	38	1.5	19
Digger Creek											
Hat Creek	Burney Springs	1 400	4,700	51	2.0	56	2.2	110			
Butte Creek	Humbug Summit	1 500	4,850	305	12.0	323	12.7	106	109	4.3	36
Susan River	Silver Lake Meadows	1 950	6,450	762	30.0	579	22.8	76	439	17.3	58
	Fredonyer Pass No. 1	1 750	5,750	203	8.0	0	0.0	0			
Indian Creek	Independence Lake	2 600	8,450	1 041	41.0	884	34.8	85	871	34.3	84
Middle Fork Feather River	Mount Dyer No. 1	2 200	7,100	635	25.0	569	22.4	90	556	21.9	88
	Rowland Creek	2 000	6,700	457	18.0	310	12.2	68	229	9.0	50
	Yuba Pass	2 000	6,700	787	31.0	630	24.8	80	483	19.0	61

* Snow courses are listed in order of elevation with each geographical group of watermaster service areas.
** Millimetres
*** Data collected only at stations listed.

TABLE 5

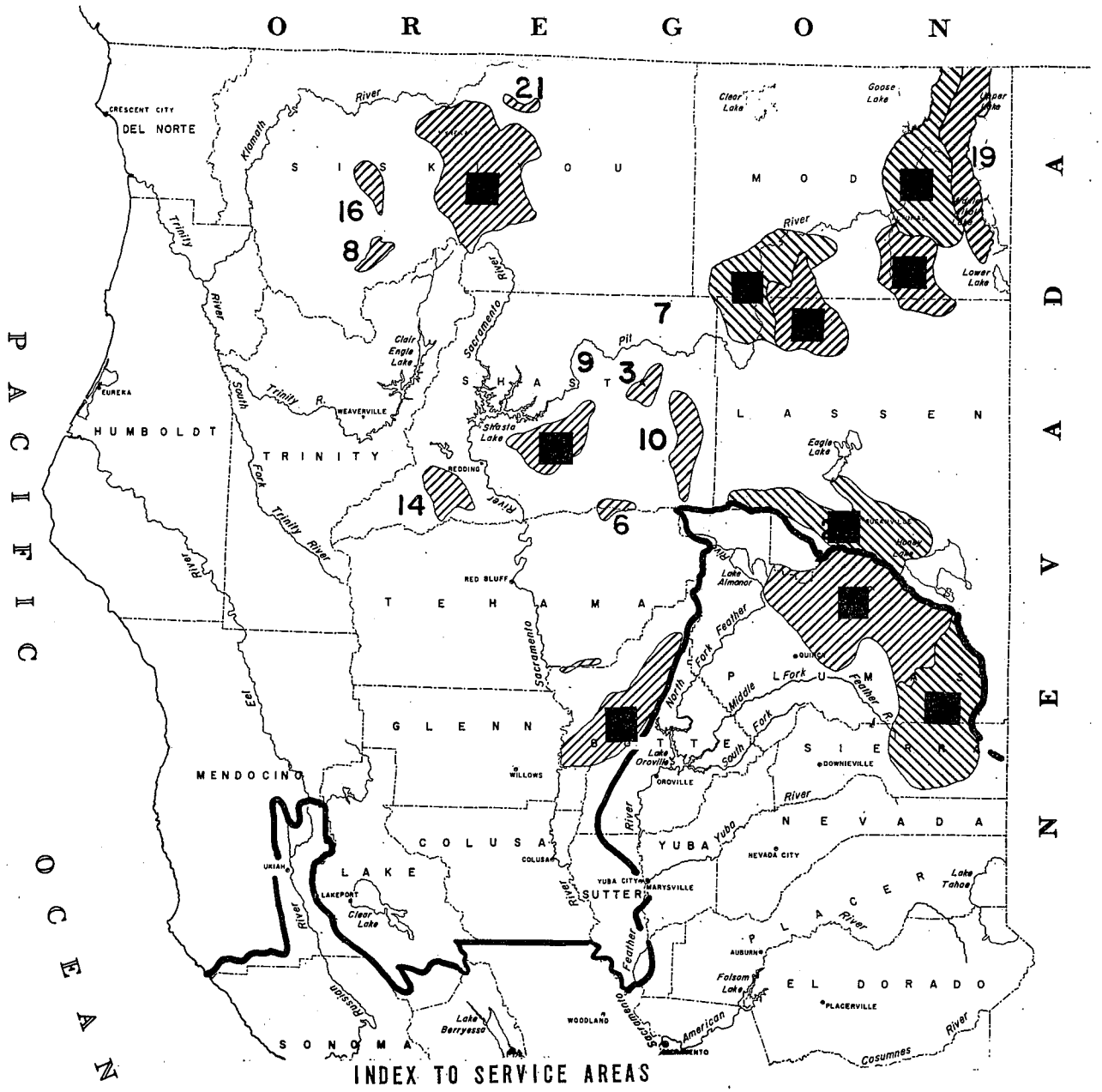
RUNOFF AT SELECTED STATIONS - 1978-79 (CUBIC DEKAMETRES AND ACRE-FEET)

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total	1/ Average	Percent Average
Shasta River near Yreka	11 280 9,140	13 640 11,060	15 420 12,500	15 760 12,780	13 830 11,210	15 950 12,930	9 782 7,930	10 130 8,210	2 307 1,870	1 653 1,340	2 344 1,900	5 181 4,200	117 300 95,070	166 300 134,800	71
Hat Creek near Hat Creek	9 202 7,460	9 227 7,480	9 609 7,790	9 695 7,860	8 351 6,770	9 227 7,480	9 042 7,330	12 360 10,020	10 900 8,840	8 523 6,910	8 289 6,720	7 709 6,250	112 100 90,910	124 200 100,700	90
Pit River near Canby	2 085 1,690	5 612 4,550	5 366 4,350	6 772 5,490	12 060 9,780	43 650 35,390	22 520 18,260	25 190 20,420	5 501 4,460	3 170 2,570	2 960 2,400	2 763 2,240	137 700 111,600	217 200 176,100	63
South Fork Pit River near Likely	1 789 1,450	1 900 1,540	756 613	629 510	807 654	1 961 1,590	2 442 1,980	13 470 10,920	12 170 9,870	9 757 7,910	8 659 7,020	4 268 3,460	58 610 47,520	70 150 56,870	84
Susan River at Susanville	365 296	676 548	767 622	1 176 953	1 628 1,320	4 971 4,030	5 390 4,370	7 302 5,920	4 342 3,520	148 120	78 63	197 160	27 040 21,920	83 640 67,810	32
Indian Creek near Crescent Mills	3 663 2,970	6 254 5,070	6 821 5,530	12 300 9,970	19 770 16,030	45 870 37,190	37 550 30,440	42 190 34,200	5 736 4,650	1 517 1,230	863 700	1 184 960	183 700 148,900	481 700 390,500	38
Middle Fork Feather River near Clio	3 108 2,520	4 095 3,320	4 108 3,330	8 672 7,030	15 060 12,210	25 420 20,610	13 400 10,860	14 680 11,900	5 107 4,140	4 712 3,820	9 227 7,480	2 072 1,680	190 600 88,890	252 900 205,000	43
Butte Creek near Chico	8 758 7,110	9 251 7,500	8 968 7,270	19 870 16,110	37 660 30,530	47 110 38,190	39 980 32,410	42 940 34,810	17 950 14,550	12 000 9,730	12 100 9,810	7 993 6,480	264 600 214,500	360 200 292,000	73

1/ Long-term average.

NOTE: Figures above line are in cubic dekametres; (below are acre-feet).

Figure 1



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Watermaster Service Areas in Northern California

ASH CREEK WATERMASTER SERVICE AREA

The Ash Creek service area is situated in Modoc and Lassen Counties near the town of Adin, about 160 km (100 mi) northeast of Redding via Highway 299. Figure 2, page 15, shows the Ash Creek stream system and diversions, plus the roads in the area.

The major sources of water for the service area are Ash Creek and three tributaries, Willow, Rush and Butte Creeks. Ash Creek rises in Ash Valley in the southeastern part of the service area a and flows northwesterly about 30 km (18 mi) to its confluence with Rush Creek, then southwesterly to the town of Adin, and then westerly to Ash Creek Swamp and the Pit River. Butte and Willow Creeks head in the mountains to the east and flow northwesterly into Big Valley. Butte Creek meets Ash Creek near the head of the valley at Adin. It meets Willow Creek about 5 km (3 mi) farther west, near the head of Ash Creek Swamp. The valley floor elevation in this vicinity is approximately 1 300 m (4,200 ft).

Basis of Service

The rights on this creek system were determined by a court reference and set forth in Decree No. 3670, Modoc County Superior Court, dated October 27, 1947. From 1949 through 1958, Ash Creek was included as a part of Big Valley watermaster service area. The Ash Creek watermaster service area was created April 3, 1958.

Approximately 85 percent of the water rights in the service area are in Big Valley, west of the town of Adin. The remaining water rights are along the upstream tributaries, and in Ash Valley, east of the town of Adin. The portion of Big Valley served is approximately 16 km (10 mi) long by 10 km (6 mi) wide, extending from the town of Adin to the confluence of Ash Creek and the Pit River.

The Ash Creek decree establishes the number of priority classes on the individual streams within the service area as follows: Ash Creek, five; Willow Creek, four; Rush Creek, one; and Butte Creek, two. Each of these streams is independently regulated.

Water Supply

The water supply for Ash and Rush Creeks is derived primarily from snowmelt, since most of the watershed is between 1 500 and 1 800 m (5,000 and 6,000 ft) in elevation. Willow Creek and Butte Creek receive substantial portions of their water from springs. These creeks normally have sufficient water to satisfy demands until about June 1, after which the supply decreases rapidly. By the latter part of June, Ash Creek normally has receded to about 0.6 m^3/s (20 ft^3/s), and Butte Creek to less than .03 m^3/s (1 ft^3/s). The flow of these creeks then remains nearly constant for the rest of the season.

Method of Distribution

Irrigation from Ash Creek and its tributaries is accomplished by using numerous small dams to divert the flow into systems of ditches. The ditches deliver the water to the various fields for spreading. Wild flooding is the method most used; however, some ranchers have checks and borders and some use pumps to operate sprinklers or to lift water to higher spreader ditches. In some cases, runoff water is captured and reused before it returns to the stream.

1979 Distribution

L. L. Bates, Water Resources Engineering Associate, was transferred to Alturas to serve as watermaster fulltime in this area.

The annual precipitation was 72 percent of normal.

ASH CREEK

Diversion Number	Name	m^3/s	ft^3/s
13	Whalley et al	0.133	4.70
15-16	Ash Creek Ranch Co.	0.013	0.45
17-18	Mosely	0.164	5.80
19-25	Megargel Drilling Co.	2.112	74.60
25	Gerig	0.076	2.70

RUSH CREEK

61-62	Scudero	0.005	0.18
63	Hitchcock	0.003	0.12
63	Stevenson	0.017	0.60
64-65	Rice	0.030	1.05
64	Tyrell	0.007	0.25
66	Kresge	0.024	0.85
66	Jacobson & Bowker	0.062	2.20

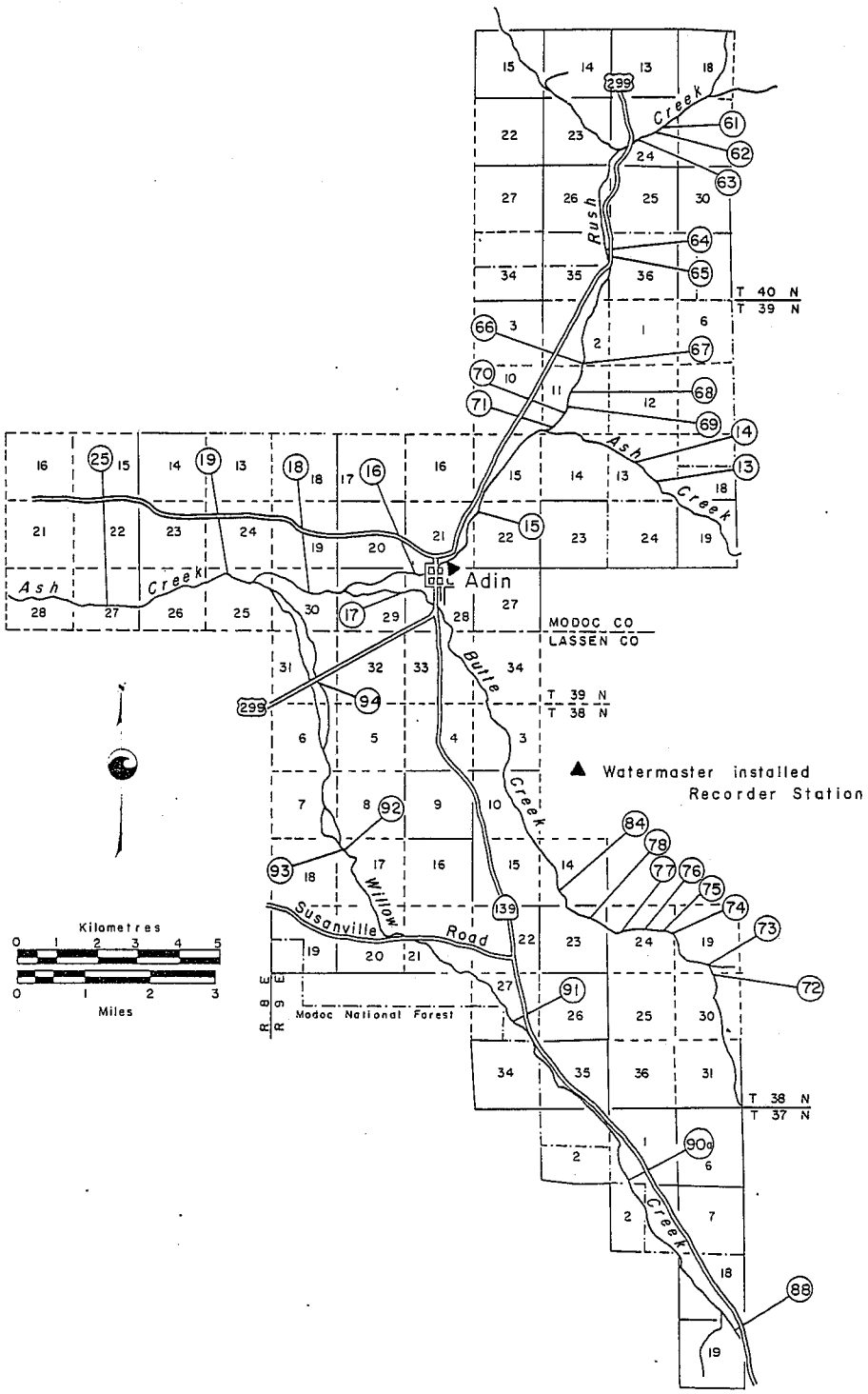
BUTTE CREEK

72-73	Landway Corp.	0.011	0.40
74-76	Haury	0.045	1.60
75-78	Dunn et al	0.011	0.40
84	Schmidt	0.028	1.00

WILLOW CREEK

88	Parks	0.024	0.85
90	Hurst et al	0.023	0.80
91	Armstrong	0.014	0.50
92	Frosty Acres	0.110	3.90
92	Weigand	0.091	3.20
93-94	Hunt	0.091	3.20

Figure 2



DIVERSIONS FROM ASH CREEK-WATERMASTER SERVICE AREA

Ash Creek. The supply met all demands until mid-June, then began its normal rapid recession. From July 1 until the end of the season the special class water, 0.042 m^3/s (1.50 ft^3/s), and first priority, 0.953 m^3/s (33.66 ft^3/s), were filled. The first priority water receded to approximately 30 percent by the end of the season.

Rush Creek. This stream has one priority of 0.149 m^3/s (5.25 ft^3/s). All needs were met until June 1. At that time the flow dropped from full priority to 40 percent at the end of the season.

Willow Creek. The flow satisfied all priorities until mid-May. At that time the fourth priorities were adjusted and finally closed completely on May 31. The single third priority received an average of 50 percent supply during June. From July 1 until the end, first priorities were filled and second priorities receded from 100 percent to 25 percent.

A problem of USFS logging contractors illegally taking water was solved after numerous meetings with all parties.

Butte Creek. The flow was sufficient for the two priorities until June 15. The stream then receded from full first, 0.071 m^3/s (2.50 ft^3/s), to 0.023 m^3/s (0.80 ft^3/s), approximately 30 percent at season's end.

ASH CREEK WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 6

ASH CREEK AT ADIN

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			1.728	61.0	2.492	88.0	0.623	22.0	0.425	15.0	0.481	17.0	0.453	16.0	1
2			1.614	57.0	2.520	89.0	0.566	20.0	0.396	14.0	0.481	17.0	0.453	16.0	2
3			1.501	53.0	2.436	86.0	0.595	21.0	0.425	15.0	0.481	17.0	0.453	16.0	3
4			1.473	52.0	2.294	81.0	0.566	20.0	0.425	15.0	0.481	17.0	0.453	16.0	4
5			1.501	53.0	5.069	179.0	0.538	19.0	0.425	15.0	0.793	28.0	0.453	16.0	5
6			1.926	68.0	5.239	185.0	0.510	18.0	0.425	15.0	0.566	20.0	0.425	15.0	6
7			1.954	69.0	5.579	197.0	0.481	17.0	0.396	14.0	0.510	18.0	0.453	16.0	7
8			1.812	64.0	4.673	165.0	0.481	17.0	0.425	15.0	0.538	19.0	0.368	13.0	8
9			2.067	73.0	3.512	124.0	0.481	17.0	0.425	15.0	0.510	18.0	0.368	13.0	9
10			1.869	66.0	3.002	106.0	0.510	18.0	0.425	15.0	0.510	18.0	0.396	14.0	10
11			2.464	87.0	2.860	101.0	0.481	17.0	0.396	14.0	0.538	19.0	0.396	14.0	11
12			2.152	76.0	2.407	85.0	0.453	16.0	0.425	15.0	0.538	19.0	0.396	14.0	12
13			2.039	72.0	2.237	79.0	0.481	17.0	0.425	15.0	0.566	20.0	0.396	14.0	13
14			2.011	71.0	2.152	76.0	0.453	16.0	0.396	14.0	0.595	21.0	0.425	15.0	14
15			2.124	75.0	2.124	75.0	0.453	16.0	0.396	14.0	0.595	21.0	0.396	14.0	15
16			2.351	83.0	2.039	72.0	0.453	16.0	0.368	13.0	0.566	20.0	0.368	13.0	16
17			2.634	93.0	1.926	68.0	0.595	21.0	0.312	11.0	0.538	19.0	0.425	15.0	17
18			2.747	97.0	1.784	63.0	0.680	24.0	0.340	12.0	0.538	19.0	0.425	15.0	18
19			2.266	80.0	1.671	59.0	0.595	21.0	0.340	12.0	0.510	18.0	0.425	15.0	19
20			2.039	72.0	1.586	56.0	0.566	20.0	0.425	15.0	0.566	20.0	0.453	16.0	20
21			1.869	66.0	1.303	46.0	0.481	17.0	0.878	31.0	0.566	20.0	0.425	15.0	21
22			1.869	66.0	1.161	41.0	0.453	16.0	0.850	30.0	0.538	19.0	0.312	11.0	22
23			2.067	73.0	1.218	43.0	0.481	17.0	0.623	22.0	0.453	16.0	0.368	13.0	23
24			2.096	74.0	1.133	40.0	0.453	16.0	0.538	19.0	0.425	15.0	0.481	17.0	24
25			1.756	62.0	1.048	37.0	0.396	14.0	0.538	19.0	0.453	16.0	0.566	20.0	25
26			1.897	67.0	0.935	33.0	0.368	13.0	0.481	17.0	0.425	15.0	0.680	24.0	26
27			2.464	87.0	0.906	32.0	0.340	12.0	0.481	17.0	0.340	12.0	0.481	17.0	27
28			2.379	84.0	0.878	31.0	0.368	13.0	0.510	18.0	0.425	15.0	0.453	16.0	28
29			2.379	84.0	0.765	27.0	0.368	13.0	0.538	19.0	0.510	18.0	0.453	16.0	29
30			2.266	80.0	0.736	26.0	0.396	14.0	0.566	20.0	0.566	20.0	0.481	17.0	30
31					0.680	24.0			0.481	17.0	0.510	18.0			31
MEAN			2.044	72.2	2.205	77.9	0.489	17.3	0.468	16.5	0.520	18.4	0.436	15.4	MEAN
DAM^3			5294.		5903.		1267.		1252.		1391.		1130.		DAM^3
AC-FT				4292.		4785.		1027.		1015.		1128.		916.	AC-FT

BIG VALLEY WATERMASTER SERVICE AREA

The Big Valley service area is in Modoc and Lassen Counties in the vicinity of the towns of Lookout and Bieber, about 145 km (90 mi) northeast of Redding via State Route 299.

The Pit River is the major source of water regulated by the watermaster. The river enters the valley north of the town of Lookout and flows southerly through the western part of the valley and out at the southern end. The major area of use is along approximately 21 km (13 mi) of valley floor, up to 10 km (6 mi) wide, along the Pit River at an approximate elevation of 1 280 m (4,200 ft).

A map of the Big Valley stream system with towns, roads, and diversions is shown in Figure 3, pages 20 and 21.

Basis of Service

The Big Valley watermaster service area was created on November 13, 1934, and service began with the 1935 season, operating under an agreement to determine water rights recorded in 1934. The water rights in this service area were set forth in Decree No. 6395, Modoc County Superior Court, a statutory decree, dated February 17, 1959.

Distributing the water on a continuous flow basis, as provided by the decree, has proven impracticable to the users who employ wild flooding or border irrigation practices because of the wide variation of flows. By mutual agreement, an alternative procedure allowing each user a definite amount of water in cubic dekametres (acre-feet) for each cubic metre per second (cubic foot per second) of right allocated by the decree has been adopted. The watermaster estimates the amount of water probably available for the next 15 to 30 days and chooses the appropriate $dam^3/ m^3/s$ (ac-ft/ft^3/s) ratio with a view to completing the rotation through the valley in not more than 30 days.

The users employing pumps and sprinklers have elected to receive their water on a more or less continuous flow basis. Over the years, different ways to insure that their applications of small amounts over extended periods result in no advantage over the flooders who use large amounts for very short periods.

Water Supply

The flow in the Pit River at the head of Big Valley is mostly from direct runoff, mainly snowmelt, and return flow from irrigation water released from West Valley and Big Sage Reservoirs above South Fork Pit River and Hot Springs Valley, respectively.

The available water supply in the Pit River as it flows through Big Valley is ordinarily adequate to satisfy all demands until about June 1. The irrigation practices in Hot Springs Valley, about 32 km (20 mi) upstream from Big Valley, have a significant effect on the available water supply in Big Valley for the rest of the season. Water users in Hot Springs Valley divert most of the flow of the Pit River for two- or three-week periods. Natural flow for use in Big Valley at these times is often less than 0.60 m^3/s (20 ft^3/s) Periodic releases from channel storage in the lower end of Hot Springs Valley sometimes increase the flow to as much as 5.7 to 8.5 m^3/s (200 to 300 ft^3/s) for relatively short periods. Consequently, equitable water distribution in Big Valley is very difficult to attain.

Roberts Reservoir, which stores runoff of a minor tributary of the Pit River near the upper end of Big Valley above Lookout, serves as a supplemental source of water to those users in the

area who are members of the Big Valley Mutual Water Company. Water from this reservoir is released into the Pit River and distributed to members of the water company along with the natural flow to which they are entitled.

Iverson Reservoir stores runoff of East Juniper Creek, a tributary to the Pit River at the lower end of Big Valley. This reservoir was completed in 1969 to provide a supplemental water supply for the McArthur, Britten and Mitchell ranches.

Method of Distribution

Most water users in the Big Valley service area irrigate on a rotation schedule either by wild flooding or by checks and borders. Large flashboard dams placed in the channel make it possible to use the large heads of water characteristic of the supply in the area. In addition, some pumps are used for diversion, both in ditches and directly into sprinkler systems. The ranches which irrigate by wild flooding must use large heads of water in order to cover unleveled or high ground. Much of the runoff is recaptured for use by downstream lands, resulting in a relatively high irrigation efficiency for the valley.

1979 Distribution

Watermaster service began in the Big Valley service area on May 1 and continued through September 30 with Lee R. Gibson, Water Resources Technician II, as watermaster.

The season started off with a streamflow of over 6 m^3/s (200 ft^3/s) in the Pit River. By the end of May, the pumpers started the first rotation. By June 1, the Pit River flow was down to 0.91 m^3/s (32 ft^3/s), and on June 2, the flow was down to 0.30 m^3/s (10 ft^3/s), so all water users were denied use by the watermaster.

On June 13, a meeting was held at the Lookout Fire Hall by the Big Valley Water Users Association to discuss the low flows in the Pit River.

On June 18, the first rotation was restarted as the flow of the Pit River picked up to 3.94 m^3/s (139 ft^3/s) and finished around the first of July.

The second rotation started July 1. By July 19, all users were shut down due to the river being down to 0.82 m^3/s (29 ft^3/s). This time the river stayed down in flow. On August 11, Roberts Reservoir releases started and helped complete the second rotation.

On August 13, the third rotation was started with Three Corners, using Roberts Reservoir water.

The first rains of the season started on August 28. This did help some, as river water was still down and the length in rotation time was long.

On September 3, the pumpers were started on the upper end while the lower users were finishing. By now, the Pit River had picked up in flow to 2.1 m^3/s (75 ft^3/s). On September 3, water was released from Roberts Reservoir and continued on and off through September 17. The flow in the Pit would not hold constant, fluctuating badly. By the last part of September, the river flow did hold to around 1 m^3/s (40 ft^3/s), so the third rotation was continued.

The construction of a 7.6-m (25-ft) weir dam below Gerig Dam was started on August 6 and was completed in October.

Releases from Roberts Reservoir were delivered to shareholders in estimated quantities as follows:

Users	dam^3	ac-ft
C. Mamath	60	50
E. Williamson	120	100
O. Gerig	190	150
G. Amen	60	50
C. Hawkins	60	50
D. Babcock	250	200
N. Gerig	120	100
C. Kramer	120	100
W. Graham	60	50
	1 040	850

During the first part of June, with the flow in the Pit River down, Kramer was releasing stored water to provide stock water to the Johnson and N. Gerig ranches near Nubieber.

BIG VALLEY WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 7

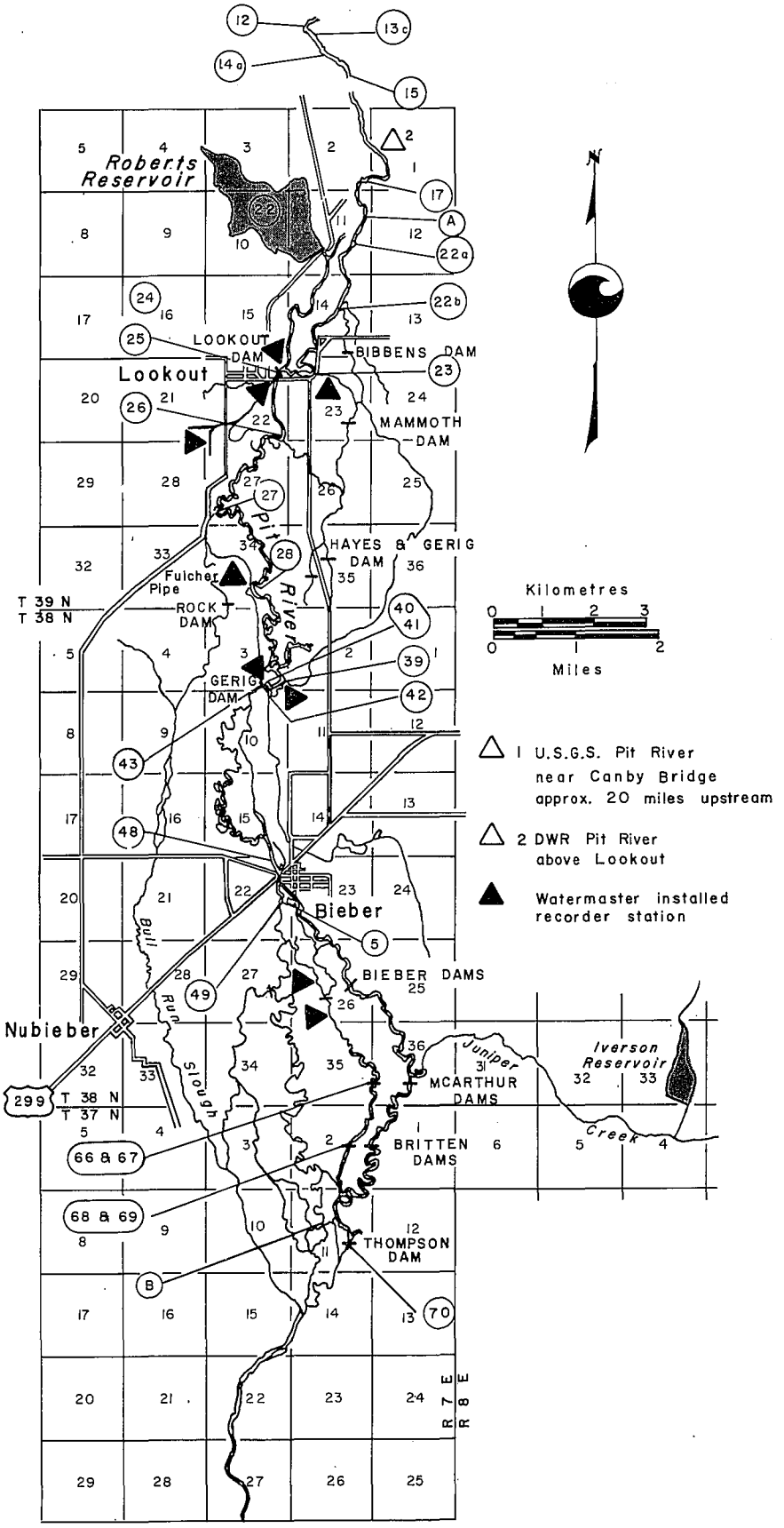
PIT RIVER NEAR CANBY

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1	6.259	221.0	5.777	204.0	9.997	353.0	0.935	33.0	1.331	47.0	0.133	4.7	1.558	55.0	1
2	6.230	220.0	5.183	183.0	11.101	392.0	0.595	21.0	1.444	51.0	0.195	6.9	1.671	59.0	2
3	5.551	196.0	4.701	166.0	10.620	375.0	0.595	21.0	1.218	43.0	0.178	6.3	1.869	66.0	3
4	6.372	225.0	4.333	153.0	9.374	331.0	0.538	19.0	1.246	44.0	0.144	5.1	1.897	67.0	4
5	8.977	317.0	4.248	150.0	9.855	348.0	0.708	25.0	1.416	50.0	0.566	20.0	1.756	62.0	5
6	14.500	512.0	4.956	175.0	12.234	432.0	0.510	18.0	1.529	54.0	1.161	41.0	1.444	51.0	6
7	22.769	804.0	6.740	238.0	14.726	520.0	0.368	13.0	1.473	52.0	0.793	28.0	0.963	34.0	7
8	32.002	1130.0	7.533	266.0	15.718	555.0	0.283	10.0	1.359	48.0	0.595	21.0	0.906	32.0	8
9	38.515	1360.0	7.731	273.0	15.010	530.0	0.340	12.0	1.246	44.0	0.821	29.0	0.906	32.0	9
10	35.966	1270.0	8.638	305.0	13.679	483.0	0.708	25.0	1.161	41.0	0.765	27.0	0.935	33.0	10
11	31.152	1100.0	8.213	290.0	11.809	417.0	0.368	13.0	1.076	38.0	0.680	24.0	0.963	34.0	11
12	29.736	1050.0	9.799	346.0	10.195	360.0	0.425	15.0	1.161	41.0	0.651	23.0	0.963	34.0	12
13	29.736	1050.0	11.356	401.0	8.581	303.0	1.529	54.0	1.189	42.0	0.793	28.0	0.821	29.0	13
14	27.697	978.0	10.563	373.0	10.677	377.0	1.728	61.0	1.161	41.0	1.331	47.0	0.765	27.0	14
15	22.599	798.0	10.337	365.0	11.640	411.0	1.756	62.0	1.104	39.0	2.662	94.0	0.623	22.0	15
16	22.741	803.0	10.478	370.0	8.609	304.0	2.690	95.0	0.991	35.0	2.237	79.0	0.481	17.0	16
17	27.131	958.0	11.923	421.0	9.685	342.0	4.050	143.0	0.935	33.0	2.294	81.0	0.481	17.0	17
18	25.233	891.0	12.036	425.0	9.572	338.0	5.437	192.0	0.906	32.0	2.379	84.0	0.651	23.0	18
19	18.323	647.0	12.206	431.0	6.910	244.0	5.466	193.0	0.906	32.0	2.124	75.0	0.850	30.0	19
20	14.047	496.0	10.932	386.0	9.714	343.0	6.457	228.0	0.708	25.0	1.926	68.0	0.991	35.0	20
21	10.762	380.0	9.317	329.0	12.008	424.0	5.352	189.0	0.538	19.0	1.671	59.0	1.104	39.0	21
22	8.808	311.0	8.808	311.0	11.555	408.0	4.050	143.0	0.623	22.0	1.501	53.0	0.935	33.0	22
23	7.335	259.0	8.609	304.0	7.137	252.0	3.682	130.0	1.416	50.0	1.388	49.0	0.963	34.0	23
24	6.514	230.0	8.864	313.0	6.145	217.0	3.597	127.0	1.529	54.0	1.161	41.0	0.963	34.0	24
25	6.315	223.0	8.468	299.0	7.165	253.0	3.115	110.0	2.832	100.0	0.878	31.0	0.991	35.0	25
26	6.627	234.0	7.901	279.0	7.930	280.0	2.520	89.0	2.294	81.0	0.595	21.0	0.991	35.0	26
27	7.108	251.0	8.751	309.0	6.825	241.0	2.096	74.0	1.643	58.0	0.538	19.0	1.020	36.0	27
28	7.250	256.0	10.648	376.0	6.202	219.0	1.501	53.0	1.048	37.0	0.595	21.0	1.218	43.0	28
29	6.570	232.0	11.385	402.0	3.172	112.0	0.000	0.0	0.623	22.0	0.878	31.0	1.246	44.0	29
30	6.344	224.0	10.252	362.0	1.869	66.0	1.133	40.0	0.368	13.0	1.133	40.0	1.020	36.0	30
31	6.089	215.0			1.897	67.0			0.235	8.3	1.529	54.0			31
MEAN	16.299	575.5	8.690	306.8	9.407	332.2	2.121	74.9	1.184	41.8	1.106	39.1	1.065	37.6	MEAN
DAM^3	43624.		22508.		25178.		5494.		3170.		2961.		2758.		DAM^3
AC-FT		35366.		18247.		20412.		4454.		2570.		2401.		2236.	AC-FT

Diversion Number	Name			m^3/s	ft^3/s
	First priority for the entire river is to maintain channel storage and stock water.			0.425	15.00
2	Mohr, K. *			0.015	0.53
3	Bushey, R. *			0.061	2.17
13c	Duncan, J. *			0.081	2.86
14a	Gould, K. *			0.034	1.20
17	Viso, J. *			0.198	6.98
22	Roberts Reservoir - Total 6 784 dam^3 (5500 Ac. Ft.)				
	Gerig, N.	5 shares			
	Gerig, O.	3 shares			
	Babcock, D.	3 shares			
	Kramer, C.	2 shares			
	Williamson, E.	2 shares			
	Graham, W.	1 share			
	Mamath, C.	1 share			
	Hawkins, C.	1 share			
	Monchamp, L.	1 share			
	Amen, G. et al	1 share			
24	Joiner, W. *			0.031	1.11
24	Lennon, J. *			0.040	1.43
22a	Monchamp, L. *			0.049	1.73
22b	Bibbens, R.			0.116	4.10
23	Three Corners Diversion		Total	0.661	23.34
	Mamath, C.			0.246	8.70
	Williamson, E.			0.178	6.30
	Hayes, H.			0.095	3.37
	Gerig, O.			0.141	4.97
24	Lookout Dam				
25	Oilar Ditch		Total	0.504	17.80
	Amen, G. et al			0.321	11.34
	Leventon, D. **			0.183	6.46
26	Ash Valley Land & Investment Co., Inc.			0.216	7.62
27	Oney, T. *			0.127	4.50
28	Fulcher Pipe		Total	0.679	23.98
	Kramer, C.			0.259	9.15
	Johnson, C.			0.229	8.10
	Knox Ranch (Gerig, N.)			0.109	3.83
	Wing, E.			0.059	2.08
	Murphy, R.			0.006	0.21
	Babcock, A.			0.017	0.61
39	Ash Creek Pipe				
40	Gerig, N.			0.260	9.20
42	Watson Ditch		Total	0.172	6.08
	Babcock, D.			0.126	4.46
	Hawkins, C.			0.046	1.62
43	Gerig Dam				
48	Graham Pipe			0.013	0.47
49	Babcock Pipes		Total	0.824	29.10
	Cox, R.			0.078	2.74
	Weigand, S.			0.071	2.51
	McArthur, J.			0.129	4.56
	Babcock Brothers			0.423	14.95
	Thompson, W.			0.123	4.34
50	Drewry, W. *			0.077	2.72
50	Bieber Dam				
66 & 67	McArthur Dams			0.481	17.00
68 & 69	Britten Dams			0.354	12.50
70	Thompson Dam			0.326	11.50

* Pump
** Pump & Flooding

NOTE: Tabulation indicates currently active diversions only.



DIVERSIONS FROM PIT RIVER
BIG VALLEY WATERMASTER SERVICE AREA

BURNEY CREEK WATERMASTER SERVICE AREA

The Burney Creek service area is in eastern Shasta County above and below the town of Burney. Figure 4, pages 24-25, shows the Burney Creek stream system including the diversions and roads.

The source of water supply for this service area is Burney Creek, which enters the southern part of the service area and flows through Burney in a northerly direction to the Pit River. The portion of the valley served by this stream is approximately 18 km (11 mi) long and 3 km (2 mi) wide, and extends both north and south of Burney.

Basis of Service

The rights on this creek system were determined by a court reference and set forth in Decree No. 5111, Shasta County Superior Court, dated January 30, 1926. Watermaster service was provided on the creek from 1926 to 1929 under the old Water Commission Act. The service area was created, along with some others, on September 11, 1929, under a new law passed in that year.

The Burney Creek decree sets forth a rotation schedule of distribution. The water users, however, have found it more beneficial to irrigate on a continuous-flow basis (one priority class plus surplus allotments), which is now normal practice. The water allotted to the Greer-Cornaz Ditch is distributed in accordance with supplemental court decrees.

Water Supply

The water supply for Burney Creek comes from springs and snowmelt. Most of the watershed lies between the elevations of 1 200 and 2 300 m (4,000 and 7,500 ft) on the northeast slopes of Burney Mountain. The creek normally has sufficient water to supply all demands until about the middle of June. The supply then gradually decreases until the end of July. For the remainder of the irrigation season, runoff from perennial springs keeps the flow nearly constant at approximately 40 percent of allotments.

The daily mean discharge of Burney Creek near Burney is presented in Table 8, page 26. The stream gaging station on Burney Creek is downstream from four points of diversion; consequently, the records do not show all of the available water supply of the creek.

Method of Distribution

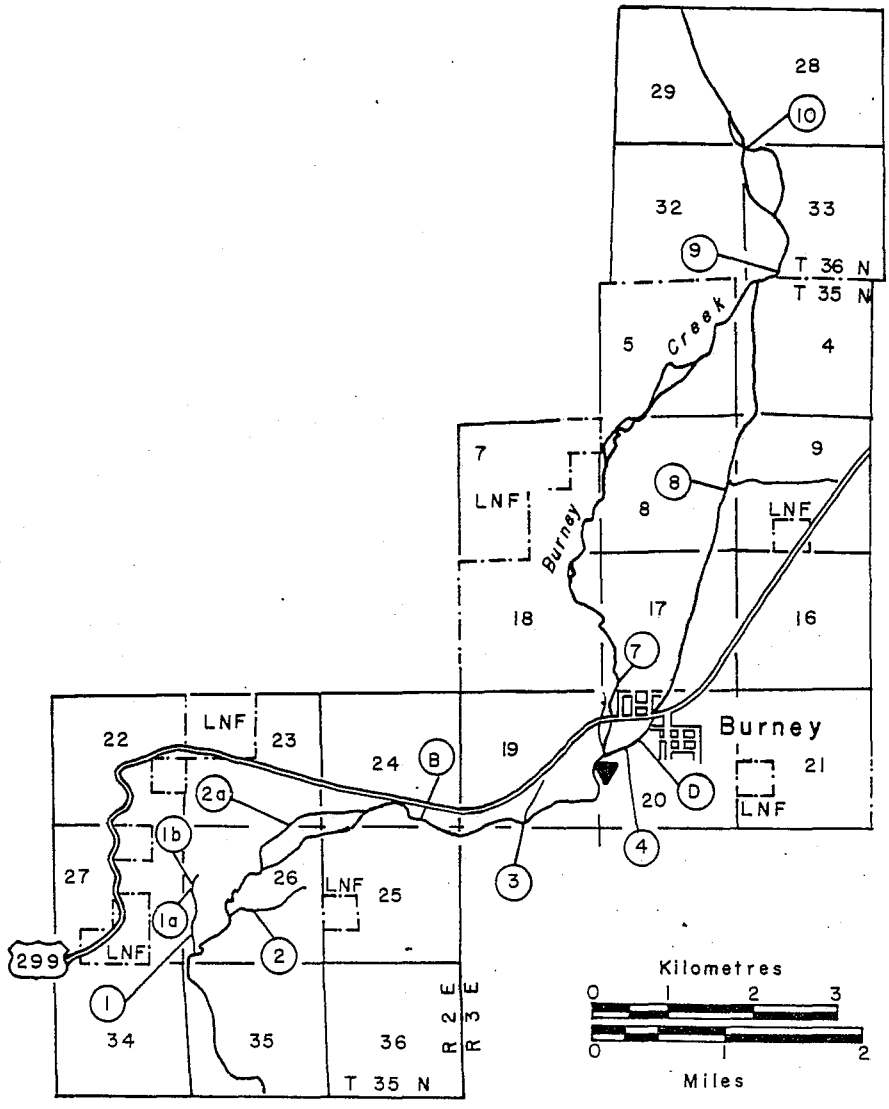
Water is diverted from Burney Creek, in most cases by means of low diversion dams, into ditches which convey it to the place of use. Lateral ditches are then used to irrigate the land.

1979 Distribution

Seth Barrett, Water Resources Technician II, was the watermaster and service began May 1. Due to late showers in the area, there was some surplus water throughout the month of May, but very hot, dry, windy conditions caused regulation of the water to less than 100 percent of water rights by early June. The supply rapidly fell off to 40 percent of water rights by the first of July and remained between 30 and 40 percent for the balance of the 1979 season.

Diversion Number	Name	m^3/s	ft^3/s
1) 2) 2a)	Whitmire	0.166	5.88
1a)	Whitmire	0.021	0.75
1b)	Whitmire	0.006	0.20
3	John & Lucy Snooks	0.011	0.375
4	Greer - Cornez Ditch	0.349	12.34
7	Hathaway	0.349	12.34
8	Estes	0.139	4.895
	Cook	0.019	0.685
	Nachreiwer	0.049	1.73
9	H. C. Ranch	0.014	0.50
10	Pierpont	0.166	5.85
B	Publishers Forest Products (pump)	0.004	0.15
D	Tyler	0.003	0.11

Figure 4



▲ Permanent recorder station DWR Burney Creek near Burney

DIVERSIONS FROM BURNEY CREEK WATERMASTER SERVICE AREA

BURNEY CREEK WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 8

BURNEY CREEK NEAR BURNEY

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			2.011	71.0	4.021	142.0	1.104	39.0	0.368	13.0	0.261	9.2	0.283	10.0	1
2			1.926	68.0	3.908	138.0	1.020	36.0	0.368	13.0	0.258	9.1	0.283	10.0	2
3			1.926	68.0	3.257	115.0	0.991	35.0	0.396	14.0	0.261	9.2	0.275	9.7	3
4			1.926	68.0	3.144	111.0	0.935	33.0	0.396	14.0	0.261	9.2	0.275	9.7	4
5			2.096	74.0	5.806	205.0	0.878	31.0	0.368	13.0	0.255	9.0	0.269	9.5	5
6			2.294	81.0	7.335	259.0	0.821	29.0	0.368	13.0	0.255	9.0	0.266	9.4	6
7			2.351	83.0	5.806	205.0	0.765	27.0	0.340	12.0	0.252	8.9	0.258	9.1	7
8			2.407	85.0	4.899	173.0	0.736	26.0	0.340	12.0	0.252	8.9	0.258	9.1	8
9			2.577	91.0	4.135	146.0	0.708	25.0	0.340	12.0	0.255	9.0	0.261	9.2	9
10			2.492	88.0	3.597	127.0	0.680	24.0	0.340	12.0	0.252	8.9	0.258	9.1	10
11			2.492	88.0	3.370	119.0	0.651	23.0	0.340	12.0	0.249	8.8	0.252	8.9	11
12			2.520	89.0	3.172	112.0	0.623	22.0	0.312	11.0	0.246	8.7	0.252	8.9	12
13			2.605	92.0	3.059	108.0	0.623	22.0	0.312	11.0	0.252	8.9	0.249	8.8	13
14			2.804	99.0	3.030	107.0	0.595	21.0	0.312	11.0	0.252	8.9	0.246	8.7	14
15			2.945	104.0	2.945	104.0	0.566	20.0	0.312	11.0	0.252	8.9	0.244	8.6	15
16			3.228	114.0	2.860	101.0	0.566	20.0	0.312	11.0	0.249	8.8	0.241	8.5	16
17			3.852	136.0	2.719	96.0	0.538	19.0	0.312	11.0	0.249	8.8	0.238	8.4	17
18			3.144	111.0	2.662	94.0	0.538	19.0	0.312	11.0	0.249	8.8	0.238	8.4	18
19			2.719	96.0	2.605	92.0	0.538	19.0	0.312	11.0	0.249	8.8	0.244	8.6	19
20			2.549	90.0	2.464	87.0	0.510	18.0	0.312	11.0	0.258	9.1	0.244	8.6	20
21			2.407	85.0	2.351	83.0	0.510	18.0	0.312	11.0	0.272	9.6	0.238	8.4	21
22			2.464	87.0	2.294	81.0	0.481	17.0	0.312	11.0	0.272	9.6	0.238	8.4	22
23			2.605	92.0	2.152	76.0	0.481	17.0	0.312	11.0	0.269	9.5	0.238	8.4	23
24			2.719	96.0	1.982	70.0	0.481	17.0	0.283	10.0	0.266	9.4	0.244	8.6	24
25			2.577	91.0	1.784	63.0	0.453	16.0	0.280	9.9	0.258	9.1	0.283	10.0	25
26			2.605	92.0	1.699	60.0	0.425	15.0	0.272	9.6	0.255	9.0	0.272	9.6	26
27			2.889	102.0	1.643	58.0	0.396	14.0	0.272	9.6	0.249	8.8	0.258	9.1	27
28			2.747	97.0	1.501	53.0	0.396	14.0	0.269	9.5	0.272	9.6	0.255	9.0	28
29			2.634	93.0	1.359	48.0	0.368	13.0	0.269	9.5	0.312	11.0	0.252	8.9	29
30			2.549	90.0	1.246	44.0	0.340	12.0	0.266	9.4	0.425	15.0	0.246	8.7	30
31					1.189	42.0			0.258	9.1	0.312	11.0			31
MEAN			2.569	90.7	3.032	107.1	0.624	22.0	0.318	11.2	0.265	9.4	0.255	9.0	MEAN
DAM^3			6653.		8116.		1616.		852.		710.		661.		DAM^3
AC-FT				5394.		6579.		1310.		691.		576.		536.	AC-FT

BUTTE CREEK WATERMASTER SERVICE AREA

The Butte Creek service area is situated in Butte County a few kilometres southeast of the City of Chico. The watermaster service area extends for about 18 km (11 mi) along Butte Creek, commencing approximately 6 km (4 mi) east of Chico and extending downstream to the crossing of the Western Canal. It contains about 8 100 ha (20,000 ac) of valley floor lands at an average elevation of 45 m (150 ft).

A map of the Butte Creek stream system is presented in Figure 5, pages 28 and 29.

Basis of Service

The rights on this stream system were determined by a statutory adjudication and set forth in Decree No. 18917, Butte County Superior Court, dated November 6, 1942. The Butte Creek watermaster service area was created on January 7, 1943.

The Butte Creek decree established three priority classes for summer use under Schedule 7, a surplus class inferior to the above rights, and a special class for Hamlin Slough. Schedule 3 of the decree defines the rights for rediversion (Diversion 50) of foreign water delivered into Butte Creek from the West Branch of the Feather River.

The Water Resources Control Board, on September 18, 1969, granted permits for the following applications to appropriate water from Butte Creek: application 22321, Gorrill Land Company; 22534, Garrison Patrick; and 22564, Louis C. Camenzind, Jr. These appropriative rights are also under control of the watermaster.

Water Supply

Butte Creek, the major source of water, drains approximately 390 km^2 (150 mi^2) of the western slope of the Sierra Nevada Mountains in the northeasterly portion of Butte County above the watermaster service area. The maximum elevation in the watershed is about 2 100 m (7,000 ft).

Normally, snowmelt produces sustained high flows in the creek until about the end of June, after which perennial springs continue to produce flows of more than 1.1 m^3/s (40 ft^3/s). Additional water is imported for distribution from the West Branch Feather River by means of the Hendricks (Toadtown) Canal through De Sabla Reservoir and Powerhouse into Butte Creek.

Records of the daily mean discharge at stream gaging stations in the Butte Creek service area are presented in Tables 9, 10 and 11, pages 30 and 31.

Method of Distribution

Water is diverted from Butte Creek by pumping and by gravity diversions. Parrott Investment Company, M & T, Inc., Dayton Mutual Water Company, and Durham Mutual Water Company divert relatively large amounts of water by gravity into ditches leading to their individual distribution systems. Various methods of irrigation are in general practice, including contour checks, strip or border checks, basin checks, furrows, wild flooding, and sprinklers. The use of sprinklers has increased in the past few years, especially for orchards.

1979 Distribution

Watermaster service began April 1, 1979, in Butte Creek service area and continued until September 30 with Kenneth E. Morgan, Water Resources Engineering Associate, as watermaster.

The available water supply for 1979 irrigation season on Butte Creek was near normal. Sufficient water was

Diversion Number	Water Right Owner	Priority 1st m^3/s	Priority 1st ft^3/s	Priority 2nd m^3/s	Priority 2nd ft^3/s	Priority 3rd m^3/s	Priority 3rd ft^3/s	Surplus m^3/s	Surplus ft^3/s	Import m^3/s	Import ft^3/s	Application Permit m^3/s	Application Permit ft^3/s
Butte Creek													
50	M. & T. Incorporated							0.708	25.00	1.510	53.33*		
	Parrott Ranch Company							0.708	25.00	1.510	53.33*		
	McClain et al	0.085	3.00										
	Dayton Mutual Water Co.	0.453	16.00							0.094	3.33*		
	* Water imported by PGandE from West Branch Feather River via Hendricks Canal and released into Butte Creek, less 5% for conveyance losses.												
53[2]	U.S. Dept. of Agriculture	0.057	2.00										
54	Patrick	0.142	5.00									0.368	13.00[1]
55	Camenzind et al	0.142	5.00									0.184	6.50[1]
56	Durham Mutual Water Co.	1.266	44.70										
	Butte Creek Country Club	0.057	2.00										
	Geiger	0.014	0.48										
	Bell	0.011	0.39										
	Domom Brothers	0.019	0.67										
	Logan	0.001	0.01										
	Vernoga	0.041	1.447										
	Konyn - Amerio	0.011	0.40										
	Bebich	0.013	0.446										
	Jugum	0.013	0.447										
	Whelock	0.007	0.26										
	Total	1.451	51.25										
57[2]	Coats	0.110	3.89										
58[2]	Wakefield	0.012	0.43										
58A[2]	Hansen							0.071	2.50				
58B[2]	Lewis	0.057	2.00										
59B[2]	Brandt	0.011	0.39										
60	Newhall Land & Farming Co.			0.170	6.00	0.021	0.75	0.602	21.25			4.248	150.00[3]
60A[2]	Keeney et al	0.019	0.66										
61	Gorrill Land Company[4]					0.283	1.00[5]	0.586	20.70[5]			2.124	75.00[3]
62[2]	White, Mead, McAlister, & Ryon					0.283	1.00	0.269	9.50				
Hamlin Slough													
	Newhall Land & Farming Co.	0.470	16.60										
	Gorrill Land Company	0.614	21.70[5]										

1/ March 1 - June 30

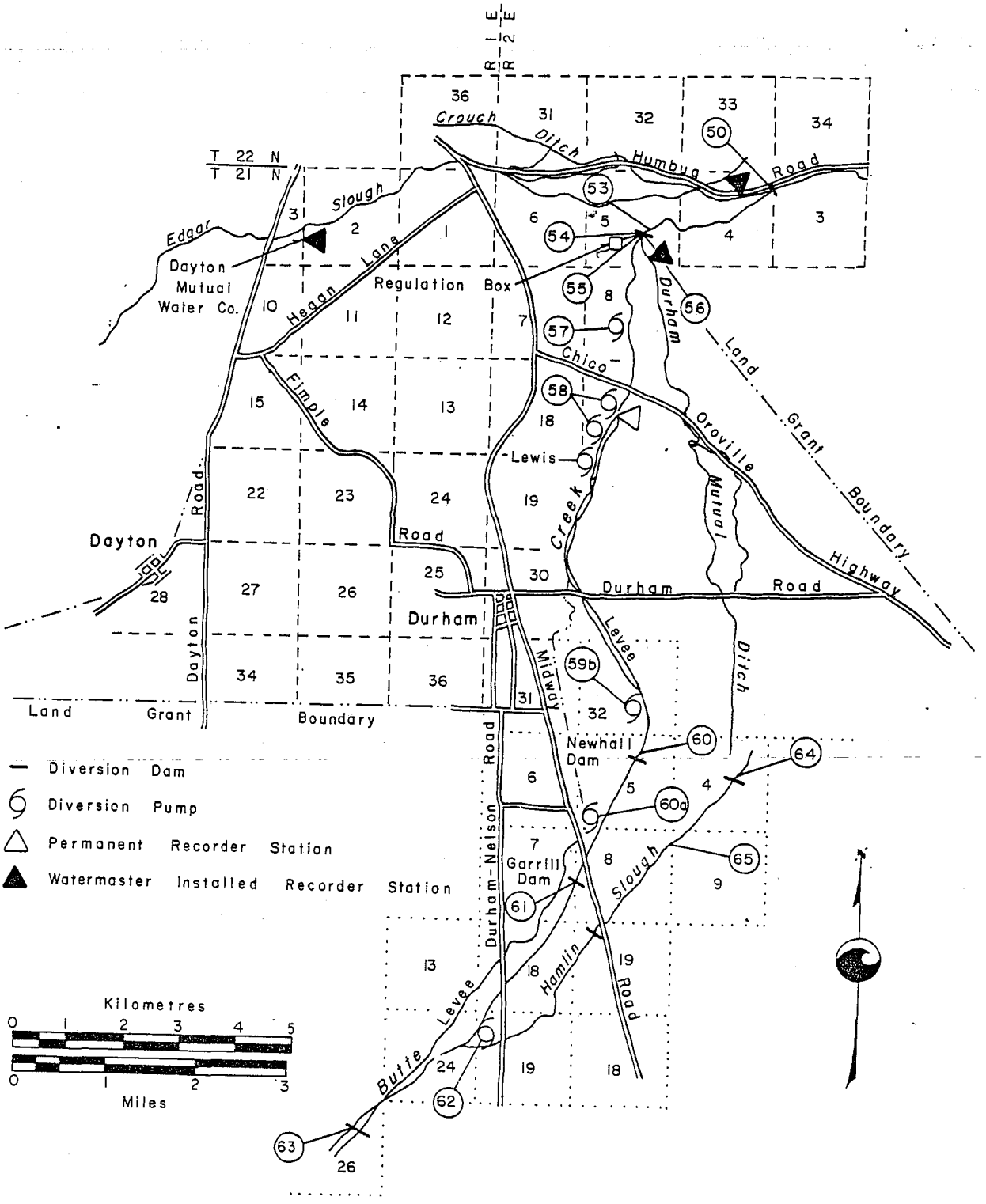
2/ Pumps

3/ March 15 - June 15

4/ See Hamlin Slough

5/ Total diversions from Butte Creek and Hamlin Slough not to exceed 0.615 m^3/s (21.70 ft^3/s)

Figure 5



DIVERSIONS FROM BUTTE CREEK
BUTTE CREEK WATERMASTER SERVICE AREA

available to satisfy all water rights, which include the appropriative water rights of Adams Esquon Ranch, Inc. (application 22039) and Gorrill Land Company (application 22321) until May 21 and then in decreasing amounts until June 11. Decreed surplus and third priority allotments were filled until July 5. During August, Magalia Reservoir was drained for repair, which increased the flow of Butte Creek to provide decreed surplus flow for Gorrill Land Company and Adams Esquon Ranch, Inc. The Adams Esquon Ranch purchased 2 100 dam^3 (1,703 ac-ft) from the Parrott Ranch from July 30 to September 11. The Parrott Ranch delivered the water by decreasing their water right at Diversion 50, Crouch Ditch, so that Adams Esquon Ranch, Inc., would have additional water at Diversion 60 for 300 ha (800 ac) of rice. Parrott Ranch made up the loss of 2 100 dam^3 (1,709 ac-ft) of Butte Creek water by reusing drainage water and increasing their Sacramento River allotment by 2 500 dam^3 (2,000 ac-ft).

BUTTE CREEK WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 9

BUTTE CREEK NEAR CHICO

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1	35.400	1250.0	16.624	587.0	16.794	593.0	9.940	351.0	4.644	164.0	4.361	154.0	4.305	152.0	1
2	19.739	697.0	15.463	546.0	16.454	581.0	9.657	341.0	4.758	168.0	5.976	211.0	4.078	144.0	2
3	16.199	572.0	15.378	543.0	16.426	580.0	9.402	332.0	4.729	167.0	5.947	210.0	3.993	141.0	3
4	14.047	496.0	14.557	514.0	16.426	580.0	9.232	326.0	4.644	164.0	6.089	215.0	3.908	138.0	4
5	13.197	466.0	14.840	524.0	20.277	716.0	9.006	318.0	4.531	160.0	6.060	214.0	3.852	136.0	5
6	14.217	502.0	15.576	550.0	21.325	753.0	8.694	307.0	4.531	160.0	6.004	212.0	3.795	134.0	6
7	16.227	573.0	15.406	544.0	21.438	757.0	8.439	298.0	4.446	157.0	5.919	209.0	3.936	139.0	7
8	16.652	588.0	14.557	514.0	19.626	693.0	8.071	285.0	4.588	162.0	5.692	201.0	3.710	131.0	8
9	16.426	580.0	14.443	510.0	18.125	640.0	7.816	276.0	4.758	168.0	4.899	173.0	3.625	128.0	9
10	15.944	563.0	13.735	485.0	17.105	604.0	7.675	271.0	4.786	169.0	3.625	128.0	3.568	126.0	10
11	15.746	556.0	13.622	481.0	16.652	588.0	7.448	263.0	4.673	165.0	4.276	151.0	3.540	125.0	11
12	15.604	551.0	13.141	464.0	16.652	588.0	7.278	257.0	4.560	161.0	4.871	172.0	3.540	125.0	12
13	15.123	534.0	13.027	460.0	16.511	583.0	7.731	273.0	4.475	158.0	5.239	185.0	3.483	123.0	13
14	15.208	537.0	13.480	476.0	16.596	586.0	6.797	240.0	4.616	163.0	4.333	153.0	3.200	113.0	14
15	19.173	677.0	13.622	481.0	16.596	586.0	6.995	247.0	4.588	162.0	3.653	129.0	3.285	116.0	15
16	22.146	782.0	14.641	517.0	16.681	589.0	7.023	248.0	4.560	161.0	3.512	124.0	3.257	115.0	16
17	17.983	635.0	16.624	587.0	16.426	580.0	6.882	243.0	4.560	161.0	3.483	123.0	3.228	114.0	17
18	16.596	586.0	16.142	570.0	16.539	584.0	6.712	237.0	4.560	161.0	3.455	122.0	3.115	110.0	18
19	15.803	558.0	14.528	513.0	16.624	587.0	6.514	230.0	4.305	152.0	3.370	119.0	2.690	95.0	19
20	14.472	511.0	13.650	482.0	16.454	581.0	6.230	220.0	4.503	159.0	3.483	123.0	2.747	97.0	20
21	13.792	487.0	13.225	467.0	16.227	573.0	5.777	204.0	4.503	159.0	4.021	142.0	2.662	94.0	21
22	13.310	470.0	12.914	456.0	16.114	569.0	5.551	196.0	4.305	152.0	3.710	131.0	2.407	85.0	22
23	12.631	446.0	14.358	507.0	15.265	539.0	5.324	188.0	4.191	148.0	3.597	127.0	2.266	80.0	23
24	12.291	434.0	19.711	696.0	14.387	508.0	4.928	174.0	4.078	144.0	3.512	124.0	2.181	77.0	24
25	12.461	440.0	17.558	620.0	13.650	482.0	5.041	178.0	4.050	143.0	3.455	122.0	2.096	74.0	25
26	12.829	453.0	17.219	608.0	13.424	474.0	4.758	168.0	4.163	147.0	3.398	120.0	2.124	75.0	26
27	32.285	1140.0	21.297	752.0	13.027	460.0	4.644	164.0	4.135	146.0	3.370	119.0	2.039	72.0	27
28	30.302	1070.0	18.833	665.0	12.489	441.0	4.729	167.0	4.078	144.0	3.342	118.0	2.011	71.0	28
29	22.769	804.0	17.530	619.0	11.583	409.0	4.786	169.0	4.021	142.0	4.956	175.0	1.982	70.0	29
30	19.229	679.0	17.077	603.0	10.847	383.0	4.729	167.0	4.135	146.0	6.797	240.0	1.954	69.0	30
31	17.445	616.0			10.337	365.0			5.409	191.0	5.636	199.0			31
MEAN	17.589	621.1	15.426	544.7	16.035	566.2	6.927	244.6	4.480	158.2	4.518	159.5	3.086	109.0	MEAN
DAM^3	47077.		39957.		42918.		17943.		11991.		12091.		7993.		DAM^3
AC-FT		38165.		32393.		34793.		14546.		9721.		9802.		6480.	AC-FT

BUTTE CREEK WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 10

BUTTE CREEK NEAR DURHAM

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1	45.878	1620.0	18.550	655.0	17.020	601.0	3.767	133.0	1.218	43.0	1.104	39.0	0.765	27.0	1
2	25.828	912.0	16.454	581.0	12.772	451.0	3.370	119.0	1.020	36.0	1.473	52.0	0.453	16.0	2
3	19.088	674.0	15.944	563.0	10.507	371.0	3.144	111.0	0.935	33.0	1.841	65.0	0.396	14.0	3
4	15.803	558.0	15.180	536.0	10.592	374.0	2.889	102.0	1.246	44.0	1.897	67.0	0.280	9.9	4
5	14.472	511.0	15.406	544.0	15.095	533.0	2.747	97.0	1.076	38.0	1.869	66.0	0.181	6.4	5
6	15.349	542.0	16.341	577.0	18.635	658.0	2.577	91.0	0.963	34.0	1.756	62.0	0.283	10.0	6
7	18.012	636.0	15.888	561.0	18.436	651.0	2.492	88.0	0.906	32.0	1.756	62.0	0.368	13.0	7
8	18.974	670.0	14.868	525.0	16.284	575.0	2.209	78.0	0.821	29.0	1.643	58.0	0.241	8.5	8
9	18.606	657.0	14.641	517.0	14.160	500.0	2.067	73.0	0.765	27.0	1.274	45.0	0.249	8.8	9
10	17.672	624.0	13.933	492.0	11.866	419.0	1.954	69.0	0.821	29.0	0.481	17.0	0.425	15.0	10
11	17.275	610.0	13.792	487.0	10.535	372.0	1.812	64.0	0.906	32.0	0.680	24.0	0.425	15.0	11
12	17.162	606.0	13.367	472.0	10.054	355.0	2.124	75.0	0.850	30.0	1.076	38.0	0.396	14.0	12
13	16.737	591.0	13.027	460.0	10.167	359.0	2.152	76.0	0.793	28.0	1.388	49.0	0.425	15.0	13
14	16.794	593.0	12.914	456.0	10.365	366.0	2.067	73.0	0.765	27.0	1.331	47.0	0.283	10.0	14
15	22.684	801.0	11.923	421.0	9.855	348.0	1.982	70.0	0.765	27.0	0.878	31.0	0.031	1.1	15
16	29.170	1030.0	12.942	457.0	10.224	361.0	2.096	74.0	0.991	35.0	0.651	23.0	0.119	4.2	16
17	22.939	810.0	15.916	562.0	9.685	342.0	2.209	78.0	1.218	43.0	0.538	19.0	0.176	6.2	17
18	19.824	700.0	15.095	533.0	9.714	343.0	2.011	71.0	1.133	40.0	0.595	21.0	0.198	7.0	18
19	18.040	637.0	12.433	439.0	9.742	344.0	1.841	65.0	1.218	43.0	0.566	20.0	0.229	8.1	19
20	16.284	575.0	12.348	436.0	9.176	324.0	1.756	62.0	1.020	36.0	0.623	22.0	0.368	13.0	20
21	15.123	534.0	12.064	426.0	8.836	312.0	1.586	56.0	0.623	22.0	0.793	28.0	0.566	20.0	21
22	14.245	503.0	11.781	416.0	8.921	315.0	1.388	49.0	0.595	21.0	0.906	32.0	0.651	23.0	22
23	13.480	476.0	13.905	491.0	7.703	272.0	1.218	43.0	0.396	14.0	0.850	30.0	0.878	31.0	23
24	12.999	459.0	21.891	773.0	7.222	255.0	1.189	42.0	0.623	22.0	0.765	27.0	0.963	34.0	24
25	12.942	457.0	18.351	648.0	7.420	262.0	1.048	37.0	0.680	24.0	0.566	20.0	0.765	27.0	25
26	13.225	467.0	18.153	641.0	7.193	254.0	0.935	33.0	0.708	25.0	0.481	17.0	0.850	30.0	26
27	34.834	1230.0	23.449	828.0	6.768	239.0	0.878	31.0	0.680	24.0	0.453	16.0	0.850	30.0	27
28	37.666	1330.0	20.504	724.0	6.287	222.0	1.133	40.0	0.481	17.0	0.368	13.0	0.680	24.0	28
29	28.320	1000.0	18.833	665.0	5.466	193.0	1.274	45.0	0.538	19.0	1.274	45.0	0.258	9.1	29
30	23.449	828.0	17.813	629.0	4.899	173.0	1.274	45.0	0.708	25.0	2.209	78.0	0.218	7.7	30
31	20.504	724.0			4.390	155.0			0.878	31.0	1.558	55.0			31
MEAN	20.432	721.5	15.590	550.5	10.322	364.5	1.973	69.7	0.850	30.0	1.085	38.3	0.432	15.3	MEAN
DAM^3	54686.		40382.		27628.		5110.		2274.		2905.		1120.		DAM^3
AC-FT		44334.		32738.		22398.		4143.		1844.		2355.		908.	AC-FT

BUTTE CREEK WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 11

TOADTOWN CANAL ABOVE BUTTE CANAL

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			3.285	116.0	3.342	118.0	3.285	116.0	2.096	74.0	2.237	79.0	1.897	67.0	1
2			2.974	105.0	3.370	119.0	3.285	116.0	2.067	73.0	2.266	80.0	1.841	65.0	2
3			3.313	117.0	3.370	119.0	3.285	116.0	2.209	78.0	2.237	79.0	1.784	63.0	3
4			3.257	115.0	3.370	119.0	3.285	116.0	2.181	77.0	2.237	79.0	1.728	61.0	4
5			3.370	119.0	3.625	128.0	3.285	116.0	2.152	76.0	2.209	78.0	1.699	60.0	5
6			3.370	119.0	3.398	120.0	3.313	117.0	2.096	74.0	2.209	78.0	1.699	60.0	6
7			3.370	119.0	3.370	119.0	3.257	115.0	2.152	76.0	2.209	78.0	1.643	58.0	7
8			3.370	119.0	3.370	119.0	3.342	118.0	2.124	75.0	2.152	76.0	1.643	58.0	8
9			3.342	118.0	3.370	119.0	3.313	117.0	2.237	79.0	2.039	72.0	1.586	56.0	9
10			3.342	118.0	3.342	118.0	3.342	118.0	2.520	89.0	1.954	69.0	1.558	55.0	10
11			3.313	117.0	3.342	118.0	3.342	118.0	2.492	88.0	1.954	69.0	1.558	55.0	11
12			3.228	114.0	3.370	119.0	3.285	116.0	2.436	86.0	1.926	68.0	1.501	53.0	12
13			3.257	115.0	3.313	117.0	3.342	118.0	2.379	84.0	1.897	67.0	1.473	52.0	13
14			3.228	114.0	3.313	117.0	3.342	118.0	2.294	81.0	1.926	68.0	1.444	51.0	14
15			3.285	116.0	3.313	117.0	3.257	115.0	2.577	91.0	1.897	67.0	1.388	49.0	15
16			3.398	120.0	3.313	117.0	3.257	115.0	2.577	91.0	1.869	66.0	1.359	48.0	16
17			3.427	121.0	3.313	117.0	3.257	115.0	2.520	89.0	1.869	66.0	1.331	47.0	17
18			3.370	119.0	3.398	120.0	3.257	115.0	2.605	92.0	1.841	65.0	1.104	39.0	18
19			3.370	119.0	3.398	120.0	3.144	111.0	2.747	97.0	1.841	65.0	0.680	24.0	19
20			3.370	119.0	3.313	117.0	3.002	106.0	2.294	81.0	1.954	69.0	0.651	23.0	20
21			3.370	119.0	3.285	116.0	2.889	102.0	2.379	84.0	1.982	70.0	0.623	22.0	21
22			3.370	119.0	3.427	121.0	2.436	86.0	2.351	83.0	1.897	67.0	0.623	22.0	22
23			3.455	122.0	3.257	115.0	2.379	84.0	2.294	81.0	1.869	66.0	0.623	22.0	23
24			3.427	121.0	3.313	117.0	2.379	84.0	2.237	79.0	1.869	66.0	0.623	22.0	24
25			3.455	122.0	3.059	108.0	2.181	77.0	2.209	78.0	1.812	64.0	0.000	0.0	25
26			3.455	122.0	3.313	117.0	2.237	79.0	2.152	76.0	1.784	63.0	0.000	0.0	26
27			3.370	119.0	3.342	118.0	1.954	69.0	2.351	83.0	1.784	63.0	0.000	0.0	27
28			3.342	118.0	3.313	117.0	1.897	67.0	2.322	82.0	1.784	63.0	0.000	0.0	28
29			3.313	117.0	3.285	116.0	2.124	75.0	2.322	82.0	2.209	78.0	0.000	0.0	29
30			3.313	117.0	3.342	118.0	2.096	74.0	2.294	81.0	3.115	110.0	0.000	0.0	30
31					3.342	118.0			2.351	83.0	2.039	72.0			31
MEAN			3.337	117.8	3.342	118.0	2.935	103.6	2.323	82.0	2.028	71.6	1.069	37.7	MEAN
DAM^3			8644.		8944.		7602.		6218.		5428.		2768.		DAM^3
AC-FT				7007.		7251.		6163.		5041.		4401.		2244.	AC-FT

COW CREEK WATERMASTER SERVICE AREA

The Cow Creek service area is in central Shasta County in the foothills east of Redding. Figures 6 through 6c, pages 35 through 41, show the Cow Creek stream system, including the diversions and major access roads.

The source of water supply for this service area consists of three major creek systems. They are North Cow Creek (sometimes referred to as Little Cow Creek), Oak Run Creek, and Clover Creek. These creeks flow in a westerly direction to their confluence in the Millville-Palo Cedro area and thence south to the Sacramento River east of the City of Anderson. The service area is generally a narrow strip of land on both sides of each of these creeks. In some cases, water is exported from one creek to the other.

Basis of Service

The water rights on each of these creek systems were determined by court references and set forth in separate decrees. Water rights for these creeks were set forth by Shasta County Superior Court decrees as follows:

Creek	Decree No.	Date
North Cow	5804	April 29, 1932
Oak Run	5701	July 22, 1932
Clover	6904	October 4, 1937

The North Cow Creek decree sets forth a rotation schedule of distribution. The water users, however, have found it more beneficial to irrigate on a continuous-flow basis which is now normal practice. Only one priority allotment was provided in each of the Cow Creek service area decrees except for the Oak Run Creek decree which contains a surplus allotment.

The Cow Creek watermaster service area was originally created on October 17, 1932, including North Cow Creek and Oak Run Creek water rights. On January 21, 1938, the service area was expanded to include the Clover Creek rights.

Water Supply

The water supply for this service area is derived mostly from springs and seepage, with some early snowmelt runoff. The watershed varies in elevation from 200 to 1 500 m (500 to 5,000 ft) and consists primarily of low brushy hills which do not accumulate a heavy snowpack. Relatively large amounts of precipitation during the winter months normally produce substantial seepage and springs that flow through the irrigation season. The creeks normally have sufficient water to supply all demands until late July. The supply then gradually decreases to an average of about 60 to 70 percent of allotments by around mid-September.

The daily mean discharge of North Cow Creek near Ingot is presented in Table 12, page 34. The stream gaging station on North Cow Creek is downstream of many of the diversions and is used by the watermaster primarily to indicate changes in flow conditions rather than amounts of water available. Consequently, the records do not show all the available water supply of the creek.

Method of Distribution

Water is diverted from the creeks, in most cases by means of low diversion dams, into ditches which convey it to the place of use. Lateral ditches are then used to spread it over the land. Irrigation has been on a continuous-flow basis instead of by rotation since 1934.

1979 Distribution

Watermaster service began May 1 in the Cow Creek service area and continued until September 30. Seth Barrett, Water Resources Technician II, was the watermaster.

Due to several showers in early May, there was some surplus throughout the month, but by June the diversions were regulated near 100 percent of water rights.

Cedar Creek. There were adequate to surplus flows for the entire season.

North Cow Creek. There was some surplus water until June when regulation of diversions was started and allotments of near 100 percent of water rights allowed until the last week in July. The supply then dropped to 80 percent, where it held briefly. Then, depending upon the extremely hot, windy conditions which would last for a week or so and then moderate, the available water would vary between 80 and 60 percent. This variation of available water continued throughout September to the end of the season.

Clover Creek. There was surplus water below the lowest diverter until early July. The available water then dropped about 10 percent a week down to 70 percent by the last of July where it held generally until the end of the season.

Oak Run Creek. The water supply to Oak Run Creek diverters was adequate throughout the season with some surplus below the lowest diverter in our service area most of the time.

COW CREEK WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

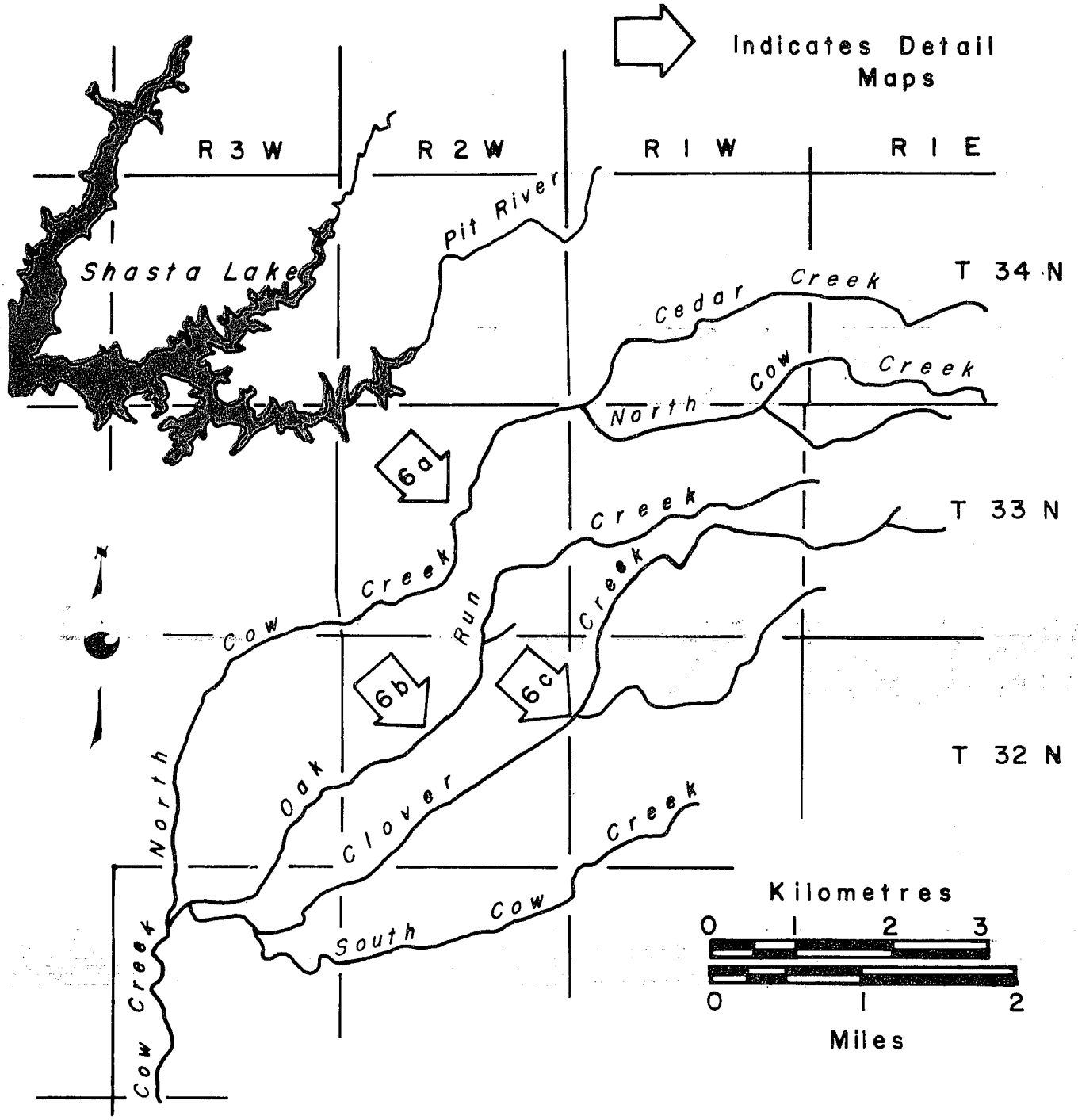
TABLE 12

NORTH COW CREEK NEAR INGOT

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1							1.699*	60.0	0.538	19.0	0.198	7.0	0.368	13.0	1
2							1.643	58.0	0.510	18.0	0.212	7.5	0.368	13.0	2
3							1.416	50.0	0.510	18.0	0.212	7.5	0.340	12.0	3
4							1.303	46.0	0.453	16.0	0.212	7.5	0.312	11.0	4
5							1.218	43.0	0.425	15.0	0.212	7.5	0.283	10.0	5
6							1.189	42.0	0.425	15.0	0.212	7.5	0.269	9.5	6
7							1.133	40.0	0.396	14.0	0.198	7.0	0.269	9.5	7
8							1.076	38.0	0.396	14.0	0.198	7.0	0.269	9.5	8
9							1.048	37.0	0.396	14.0	0.198	7.0	0.269	9.5	9
10							1.020	36.0	0.396	14.0	0.198	7.0	0.227	8.0	10
11							0.991	35.0	0.368	13.0	0.198	7.0	0.198	7.0	11
12							0.935	33.0	0.340	12.0	0.198	7.0	0.198	7.0	12
13							0.878	31.0	0.283	10.0	0.227	8.0	0.198	7.0	13
14							0.850	30.0	0.255	9.0	0.212	7.5	0.198	7.0	14
15							0.821	29.0	0.283	10.0	0.212	7.5	0.181	6.4	15
16							0.793	28.0	0.269	9.5	0.159	5.6	0.170	6.0	16
17							0.793	28.0	0.227	8.0	0.159	5.6	0.159	5.6	17
18							0.793	28.0	0.212	7.5	0.159	5.6	0.159	5.6	18
19							0.793	28.0	0.212	7.5	0.170	6.0	0.198	7.0	19
20							0.793	28.0	0.212	7.5	0.198	7.0	0.198	7.0	20
21							0.765	27.0	0.227	8.0	0.227	8.0	0.198	7.0	21
22							0.736	26.0	0.269	9.5	0.212	7.5	0.198	7.0	22
23							0.708	25.0	0.255	9.0	0.212	7.5	0.198	7.0	23
24							0.680	24.0	0.198	7.0	0.212	7.5	0.198	7.0	24
25							0.623	22.0	0.159	5.6	0.212	7.5	0.368	13.0	25
26							0.623	22.0	0.159	5.6	0.212	7.5	0.340	12.0	26
27							0.595	21.0	0.159	5.6	0.212	7.5	0.283	10.0	27
28							0.538	19.0	0.170	6.0	0.269	9.5	0.283	10.0	28
29							0.595	21.0	0.181	6.4	0.269	9.5	0.283	10.0	29
30							0.595	21.0	0.181	6.4	0.850	30.0	0.283	10.0	30
31									0.198	7.0	0.425	15.0			31
MEAN							0.921	32.5	0.299	10.6	0.234	8.3	0.249	8.8	MEAN
DAM^3							2386.		800.		627.		645.		DAM^3
AC-FT								1935.		648.		508.		523.	AC-FT

* Beginning of record

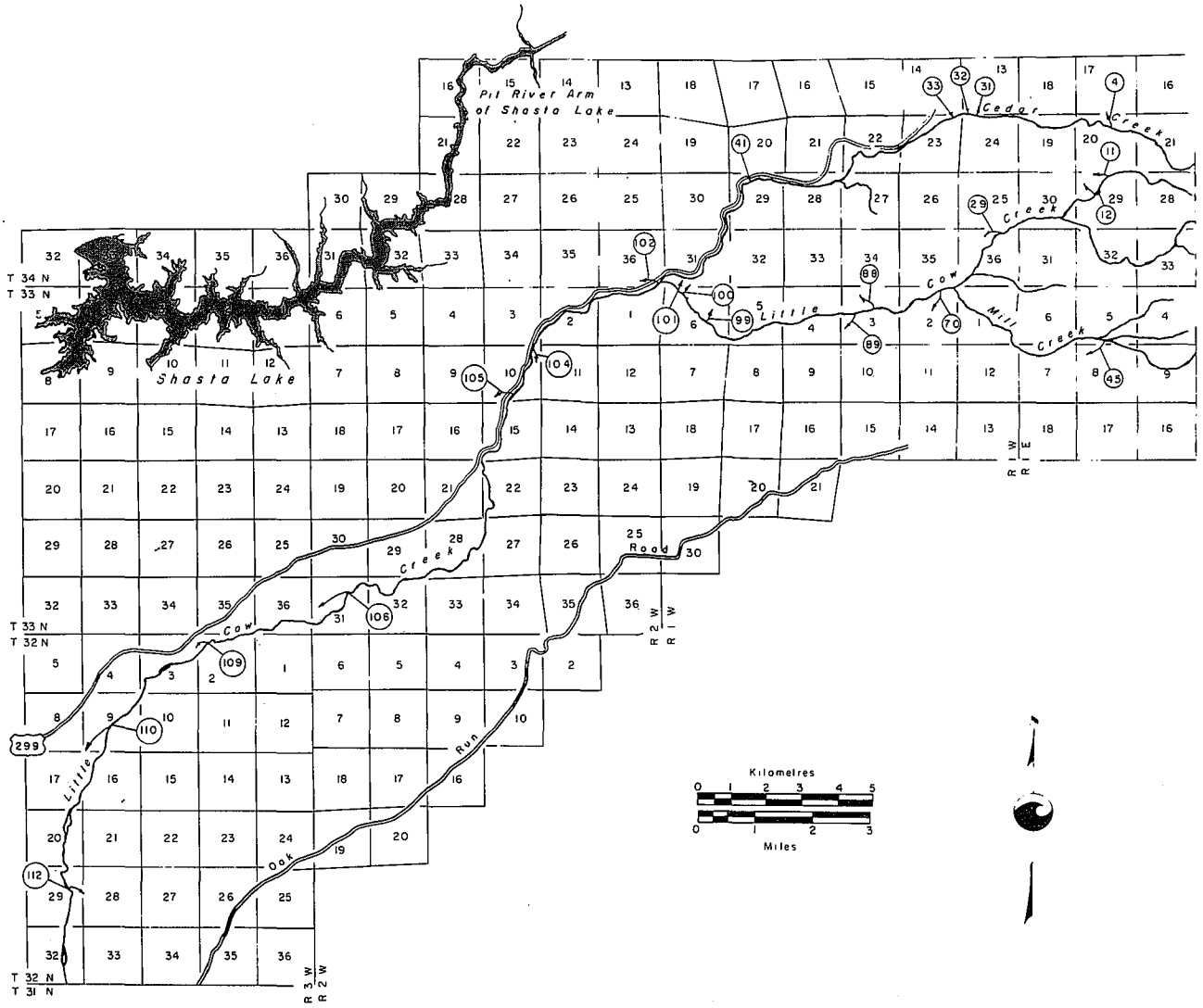
Figure 6



INDEX SHEET
COW CREEK
WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
4	Bishop	0.014	0.50
11	McMillian	0.013	0.46
12	Benbow	0.018	0.63
29	Grant-Pherson-Jones	0.074	2.60
31	Spaulding-Haley	0.037	1.30
32	Halcomb	0.113	4.00
33	Roe	0.008	0.30
41	Hadley (pump)	0.028	0.80
45	Export Water to Oak Run Creek	0.142	5.00
70	Nichols	0.009	0.31
88	Ruthford	0.051	1.80
89	Bobich	0.013	0.47
99	Shaw	0.003	0.10
100	Emerald	0.007	0.25
101	Porteous	0.013	0.45
102	Hendrix	0.008	0.30
104	Artadel Mining Company	0.001	0.04
105	Artadel Mining Company	0.016	0.55
106	Rickert	0.123	4.35
109	Matthews (pump)	0.003	0.10
110	Cook & Butcher	0.127	4.50
112	Boyle (pump)	0.011	0.40

Figure 6a



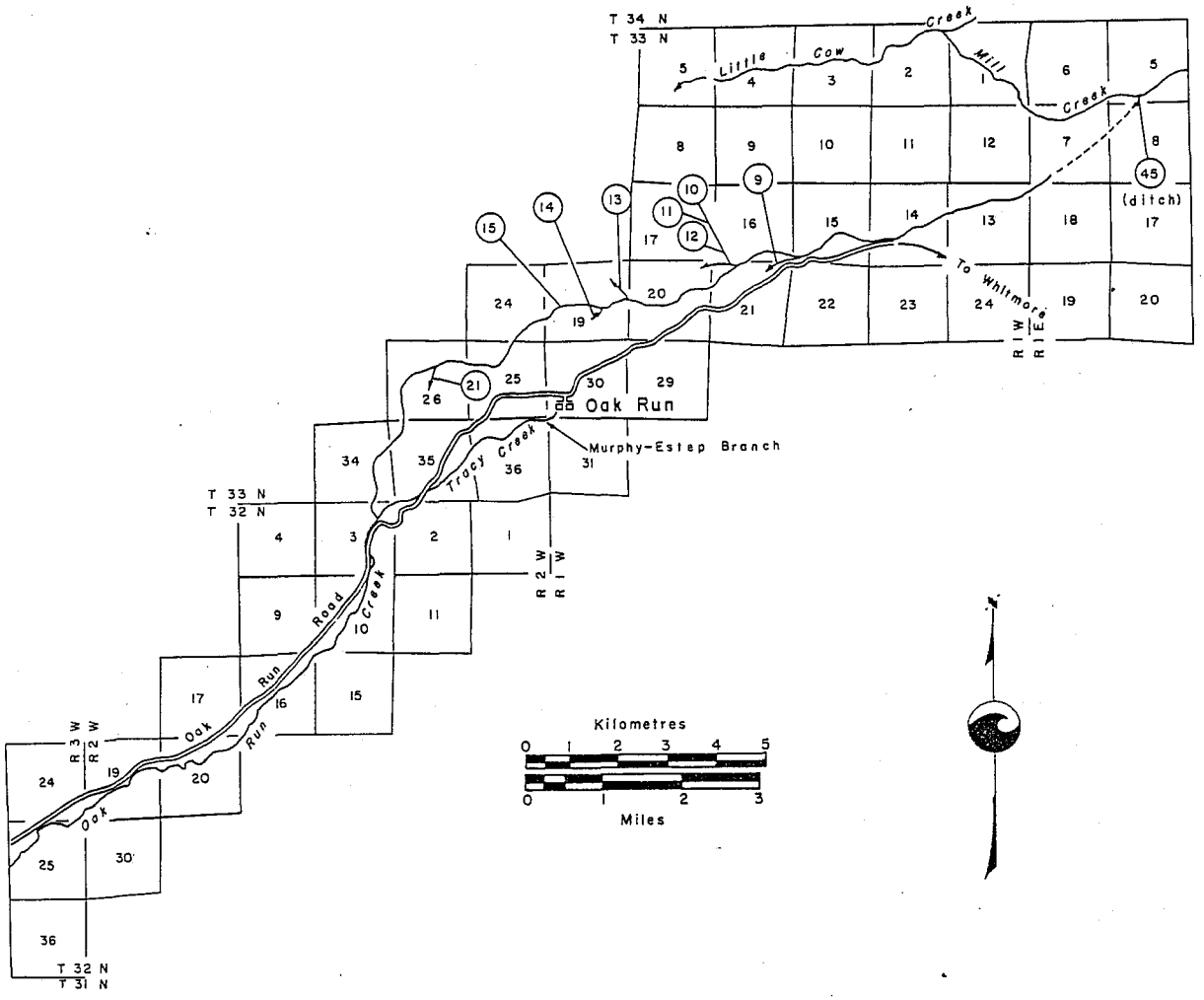
DIVERSIONS FROM COW CREEK

COW CREEK WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
45	Welsh-Strayer Ditch from Mill Creek to Oak Run Creek	0.142	5.00
9	Welsh - Strayer Rediversion	0.065	2.30*
10 11 12	Pedmore Upper Pedmore Lower Pedmore South	0.007	0.25
13	Alpaugh	0.018	0.65
14	Pedmore	0.018	0.65
15	Kerkendahl	0.018	0.65
21	Winters (Surplus)	0.011	0.395

* When flow of Oak Run Creek at Diversion 9 is less than 0.153 m^3/s (5.40 ft^3/s) including foreign water from Mill Creek, the flow at Diversion 9 will be divided 43% into Diversion 9 and 57% to Oak Run Creek.

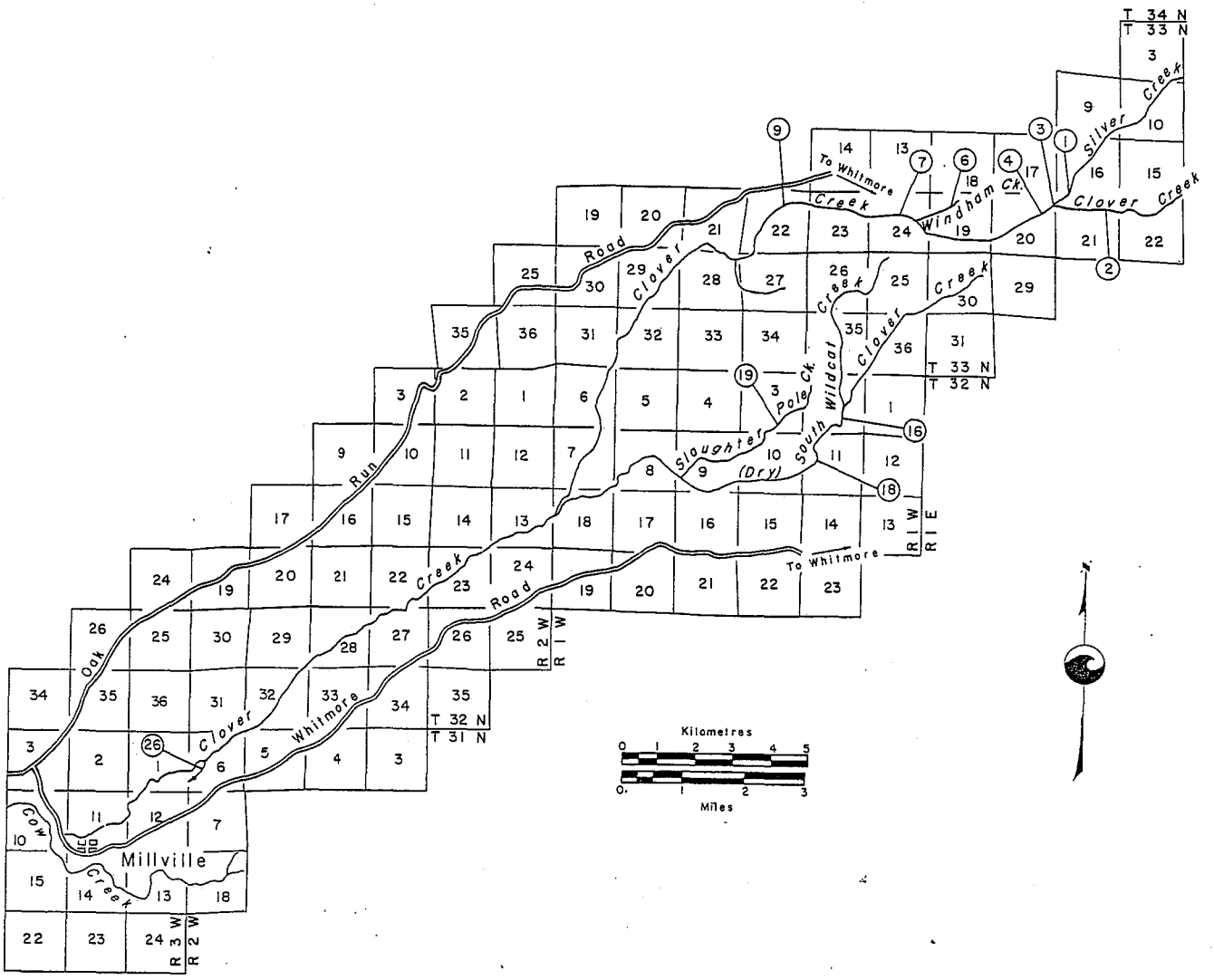
Figure 6b



DIVERSIONS FROM OAK RUN CREEK
COW CREEK WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
1	Worley Ditch	0.078	2.74
2	Guttman Ditch	0.052	1.85
3	Bonde Ditch	0.037	1.30
4	Mill Ditch	0.154	5.45
6	Maxwell Ditch	0.010	0.35
7) 9)	Welch and Nailer Ditch	0.061	2.15
16	Harper-Covey	0.014	0.50
18	J. Hunt	0.011	0.40
19	Slaughter Pole Ditch	0.011	0.40
26	Millville Ditch	0.184	6.50

Figure 6c



DIVERSIONS FROM CLOVER CREEK

COW CREEK WATERMASTER SERVICE AREA

DIGGER CREEK WATERMASTER SERVICE AREA

The Digger Creek service area is situated in southeastern Shasta County and northeastern Tehama County.

Digger Creek forms a portion of the boundary line between Shasta and Tehama Counties. It drains an area of approximately 120 km^2 (45 mi^2) on the western slopes of mountains situated immediately west of Lassen National Park. The creek flows in a westerly direction through the town of Manton to its confluence with North Fork Battle Creek. Manton, the only community in the area, is located approximately 60 km (40 mi) northeast of Red Bluff.

A map of the Digger Creek stream system is presented as Figure 7, page 44 and 45.

Basis of Service

The rights to use of the waters of Digger Creek were determined by five court adjudications. The Crooker Ditch, now combined with the Harrison Ditch, may divert all the water in the creek at its point of diversion. Diversions below this point, though defined by decree, are not in the service area.

Four Tehama County Superior Court decrees define the rights included in the service area. These decrees are listed on page 3.

The four decrees have, in effect, divided the water rights on the creek into two groups, the upper users and the lower users. The three upper users irrigate land adjoining the stream so that all water not consumptively used returns to Digger Creek. The lower users are located within a 10 km^2 (5 mi^2) area. Very little runoff from the lower users returns to the creek.

The water rights of the three upper users are absolute and not correlative to the lower users; therefore, allotments are not cut proportionally as Digger Creek flows decrease. Since the lower users have to stand all deficiencies, the upper users, in effect, have first priority allotments, and the lower users have second and third priority allotments.

Water Supply

Precipitation, occurring principally in the winter months, is typical of Northern California foothill areas. Snowmelt contributes to the early runoff, but the summer streamflow is primarily from springs. In average runoff years there is sufficient flow in Digger Creek, with careful regulation, to satisfy all decreed allotments throughout the entire irrigation season. However, serious deficiencies occur in dry years.

The estimated daily mean discharge of Digger Creek below the mouth of the South Fork is presented in Table 13, page 46.

Method of Distribution

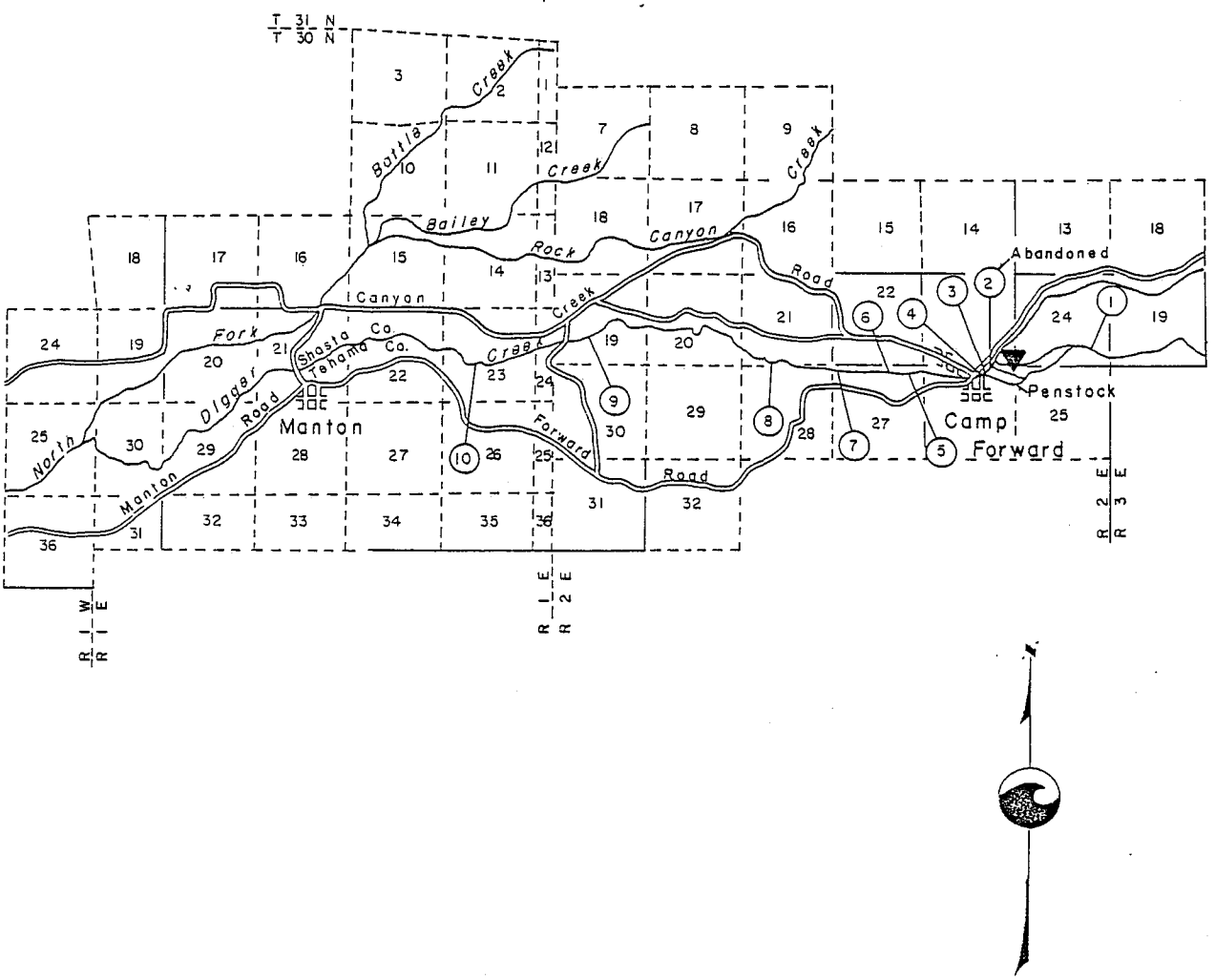
Irrigation is accomplished principally by wild flooding, although border checks and sprinklers are used on a few fields. Small diversion dams are placed in the stream channel to divert water into ditches for conveyance to the fields.

1979 Distribution

Seth Barrett, Water Resources Technician II, was the watermaster for this season. The watermaster service began May 1 and continued until September 30. The supply was good for the entire season with regulation of the diversions to 90 percent of water rights, from the Boole Ditch and downstream to the Crooker-Harrison division, by the early part of August. Available water to these lower users remained fairly constant at 90 percent until the end of the season.

Diversion Number	Name	m^3/s	ft^3/s
1,3-5	Forward Brothers	0.217	7.65
6	Wright	0.014	0.50
	Pritchard, E.	0.011	0.375
	Pritchard, R.	0.064	2.25
7	Pritchard, R.	0.013	0.45
8	Boole Ditch	0.224	7.90
9	Williams Ditch	0.031	1.10
10	Crooker-Harrison Ditch	0.085	3.00

Figure 7



▲ Watermaster installed recorder station.

DIVERSIONS FROM DIGGER CREEK
DIGGER CREEK WATERMASTER SERVICE AREA

DIGGER CREEK WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 13

DIGGER CREEK BELOW SOUTH FORK BRANCH

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^2/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1							1.076	38.0*	0.595	21.0	0.453	16.0	0.425	15.0	1
2							1.076	38.0	0.595	21.0	0.453	16.0	0.425	15.0	2
3							1.161	41.0	0.595	21.0	0.453	16.0	0.425	15.0	3
4							1.161	41.0	0.566	20.0	0.453	16.0	0.425	15.0	4
5							1.161	41.0	0.566	20.0	0.453	16.0	0.425	15.0	5
6							1.189	42.0	0.566	20.0	0.453	16.0	0.425	15.0	6
7							1.076	38.0	0.566	20.0	0.453	16.0	0.425	15.0	7
8							0.991	35.0	0.538	19.0	0.453	16.0	0.425	15.0	8
9							0.963	34.0	0.538	19.0	0.425	15.0	0.425	15.0	9
10							0.935	33.0	0.538	19.0	0.425	15.0	0.425	15.0	10
11							0.935	33.0	0.538	19.0	0.425	15.0	0.396	14.0	11
12							0.935	33.0	0.510	18.0	0.425	15.0	0.396	14.0	12
13							0.906	32.0	0.510	18.0	0.425	15.0	0.396	14.0	13
14							0.878	31.0	0.510	18.0	0.425	15.0	0.396	14.0	14
15							0.821	29.0	0.510	18.0	0.425	15.0	0.425	15.0	15
16							0.821	29.0	0.481	17.0	0.425	15.0	0.396	14.0	16
17							0.765	27.0	0.481	17.0	0.425	15.0	0.396	14.0	17
18							0.736	26.0	0.481	17.0	0.425	15.0	0.396	14.0	18
19							0.736	26.0	0.481	17.0	0.425	15.0	0.396	14.0	19
20							0.708	25.0	0.481	17.0	0.425	15.0	0.396	14.0	20
21							0.708	25.0	0.481	17.0	0.453	16.0	0.396	14.0	21
22							0.680	24.0	0.481	17.0	0.425	15.0	0.396	14.0	22
23							0.680	24.0	0.481	17.0	0.425	15.0	0.368	13.0	23
24							0.680	24.0	0.481	17.0	0.425	15.0	0.368	13.0	24
25							0.651	23.0	0.453	16.0	0.425	15.0	0.425	15.0	25
26							0.651	23.0	0.453	16.0	0.425	15.0	0.396	14.0	26
27							0.651	23.0	0.453	16.0	0.425	15.0	0.368	13.0	27
28							0.623	22.0	0.453	16.0	0.453	16.0	0.368	13.0	28
29							0.623	22.0	0.453	16.0	0.538	19.0	0.368	13.0	29
30							0.595	21.0	0.453	16.0	0.538	19.0	0.368	13.0	30
31									0.453	16.0	0.425	15.0			31
MEAN							0.852	30.1	0.508	17.9	0.441	15.6	0.402	14.2	MEAN
DAM^3							2208.		1360.		1181.		1042.		DAM^3
AC-FT								1790.		1102.		957.		844.	AC-FT

* Beginning of record

FALL RIVER WATERMASTER SERVICE AREA

The Fall River service area is in Shasta County in the vicinity of Fall River Mills and McArthur, about 100 km (70 mi) northeast of Redding via State Route 299.

The Tule River originates at Big Lake and Horr Pond and flows for a distance of about 8 km (5 mi), where it enters Fall River. The McArthur diversion canal diverts water by gravity from the Tule River which flows for 8 km (5 mi) to near the town of McArthur, where land is irrigated along the Pit River.

Two pumps are monitored in the service area, one on the Tule River and one on Fall River.

Basis of Service

The Fall River service area was created on January 14, 1976; watermaster service began in 1976.

Watermaster service is provided annually from March 15 to October 15 in accordance with an agreement dated November 25, 1975, between John McArthur, Kenneth McArthur, and PGand E.

1979 Distribution

Watermaster service began on March 15 and continued until October 15. Lee R. Gibson, Water Resources Technician II, was watermaster.

The flow in McArthur Canal was regulated in accordance with water rights adjudicated to the McArthur family by the Shasta County Superior Court in a judgment dated April 26, 1928, modified by agreement dated March 15, 1976, between Kenneth McArthur and PGandE.

In the letter of understanding dated October 13, 1975, between PGand E and John R. McArthur, it was agreed that for all water used on nonriparian lands (presently comprising approximately 1 900 ha /4,700 ac/), corresponding flow reductions will be made in the diversions into the McArthur Canal. These reductions were made, when necessary, during the scheduled regulation changes to the McArthur Canal.

1979 MONTHLY SUMMARY OF McARTHUR DIVERSIONS

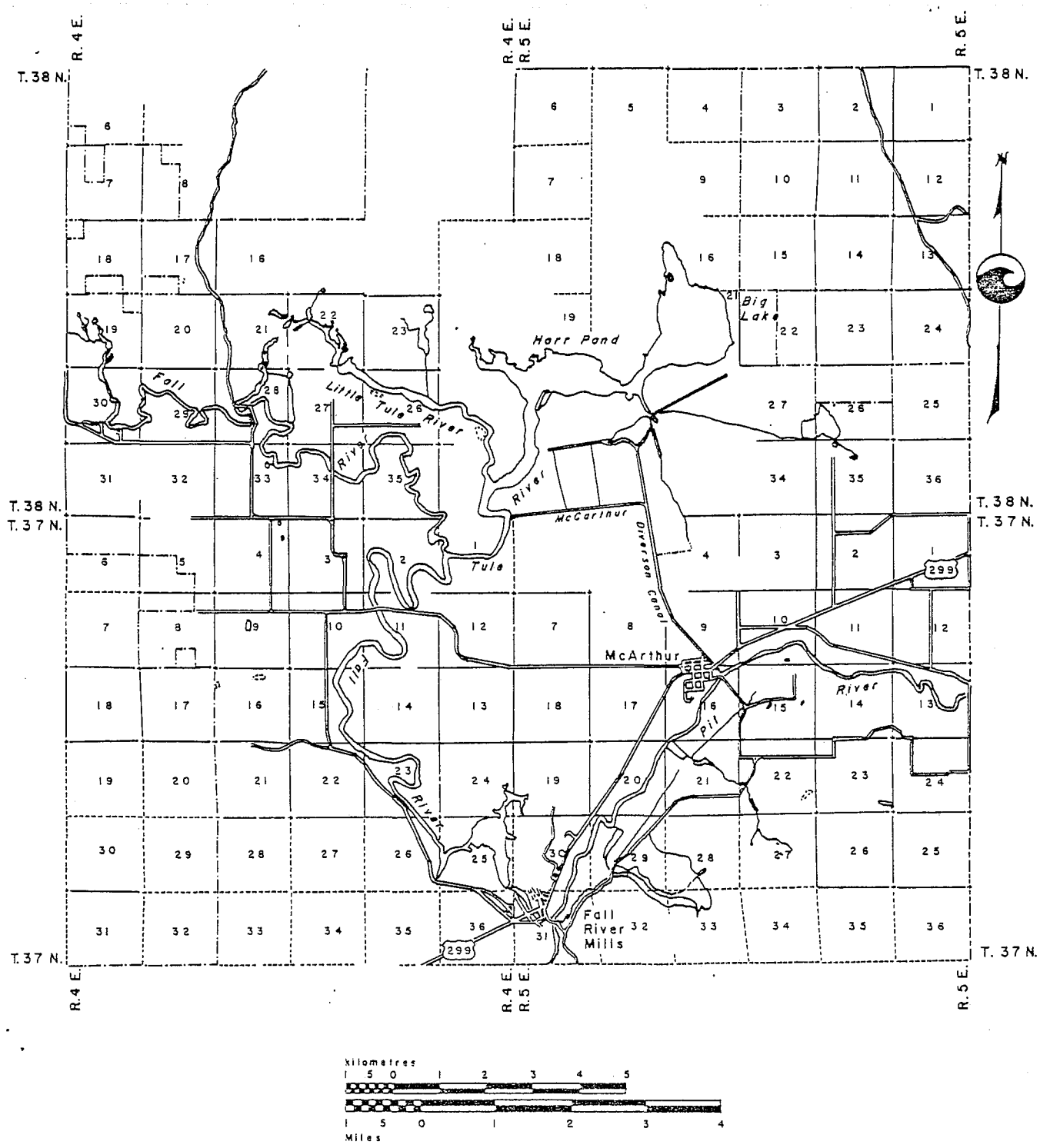
Period	McArthur Canal		Two Pumps Nonriparian Lands		Total McArthur Diversions		McArthur Water Rights	
	dam^3	ac-ft	dam^3	ac-ft	dam^3	ac-ft	dam^3	ac-ft
Mar. 15-31[1/]	754	611	0	0	754	611	995	807
April	1 761	1,428	0	0	1 761	1,428	1 927	1,562
May	2 314	1,876	199	161	2 513	2,037	2 513	2,037
June	2 035	1,650	472	383	2 507	2,033	2 440	1,978
July	3 308	2,682	266	216	3 574	2,898	3 573	2,897
August	3 182	2,580	391	317	3 573	2,897	3 573	2,897
Sept.	2 006	1,626	154	125	2 160	1,751	2 312	1,784
Oct. 1-15[2/]	929	753	0	0	929	753	860	697
Totals	16 290	13,210	1 482	1,202	17 770	14,410[3/]	18 080	14,660

1/ Beginning of watermaster season.

2/ End of watermaster season.

3/ McArthur owed PGandE 216 dam^3 (175 ac-ft) from October 15, 1978, to March 15, 1979. PGandE owed McArthur 308 dam^3 (250 ac-ft) from March 15 to October 15, 1979. The net as of October 15, 1979, is PGandE owes McArthur 93 dam^3 (75 ac-ft).

Figure 8



McCARTHUR CANAL DIVERSIONS
FALL RIVER WATERMASTER SERVICE AREA

FRENCH CREEK WATERMASTER SERVICE AREA

The French Creek service area is situated in Scott Valley, western Siskiyou County, near the town of Etna. The major sources of water supply are French, Miners, and North Fork French Creeks. French Creek flows in a northeasterly direction through the central part of the service area. Miners Creek begins east of the headwaters of French Creek and flows in a northerly direction, joining French Creek about 4.8 km (3 mi) above its confluence with Scott River. North Fork French Creek begins north of the headwaters of French Creek and flows easterly, joining French Creek 1.6 km (1 mi) upstream from the confluence with Miners Creek.

The service area encompasses the entire agricultural area within the French Creek Basin, and some additional lands along the west side of the Scott River near the town of Etna. The service area is about 1 km (0.5 mi) wide and 8 km (5 mi) long, with the main axis and drainage running from south to north. Elevations of the agricultural area range from about 1 000 m (3,200 ft) at the south to about 900 m (2,800 ft) at the confluence of French Creek and Scott River.

A map of the French Creek stream system with the diversions and roads is presented as Figure 9, pages 52 and 53.

Basis of Service

The rights on this creek system were determined by court reference and set forth in Decree No. 14478, Siskiyou County Superior Court, dated July 1, 1958.

Water is distributed according to three schedules: North Fork French Creek with three priorities; Miners Creek with three; and the French Creek, Horse Range Creek, Paynes Lake Creek, and Duck Lake Creek system with seven. These schedules are independent of each other with two exceptions: (1) Miners Creek users have the option of diverting from French Creek when water is not available from Miners Creek; and (2) maximum allowable flows are specified at given points, regardless of the source of the water.

One peculiarity of this decree is that it included two water rights that have a specified amount but are subject to the exclusive control of the other owners of the ditch.

The French Creek watermaster service area was created on November 19, 1968, and service was started on July 1, 1969.

Water Supply

The water supply is derived from snowmelt runoff, springs and seepage, and occasional summer thundershowers.

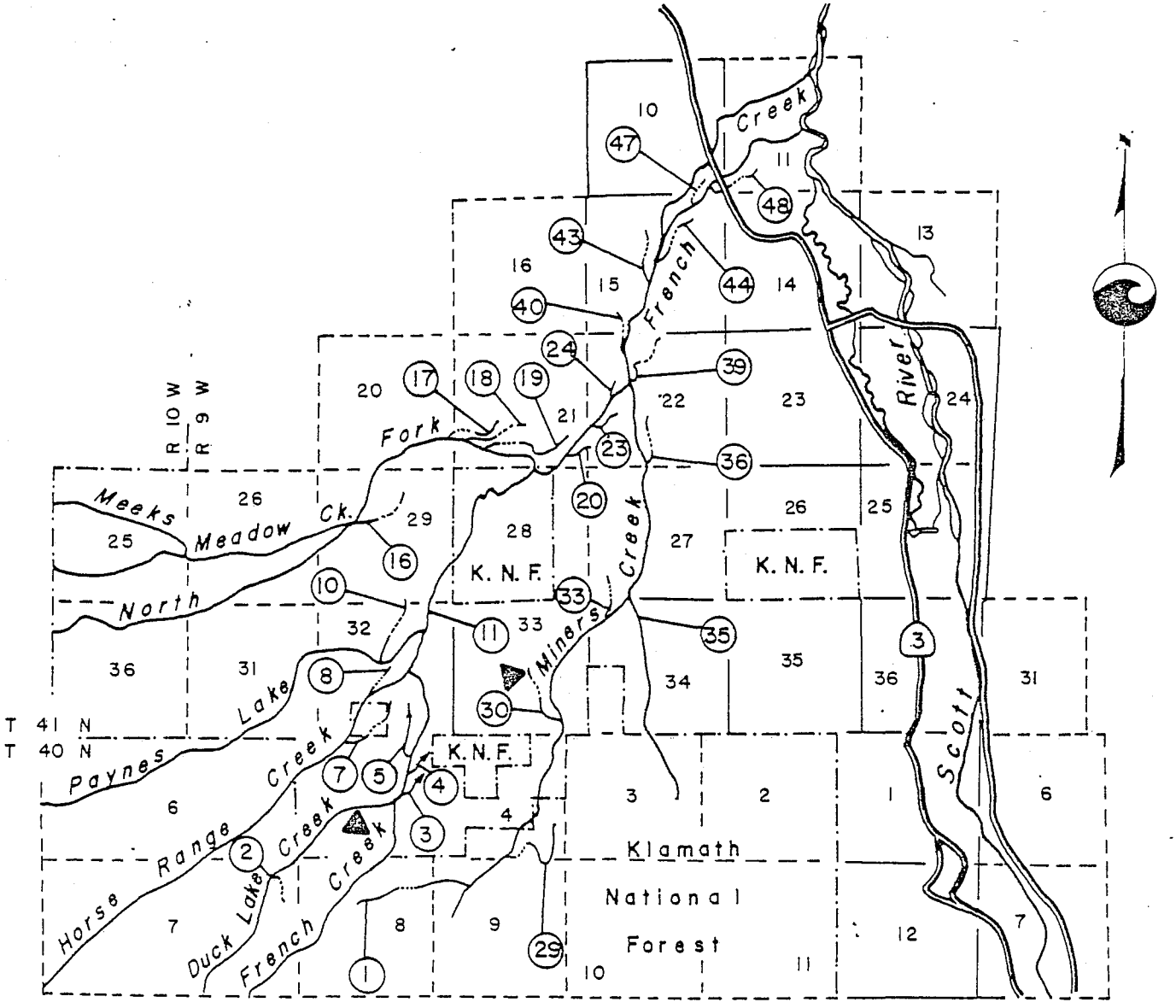
The watershed of French Creek contains about 80 km^2 (32 mi^2) of heavily forested, steep, mountainous terrain of the easterly slopes of the Salmon Mountains. It varies in elevation from about 2 200 m (7,200 ft) along its west rim to about 1 000 m (3,200 ft) at the foot of the slopes bordering French Creek Valley. Snowmelt runoff is normally sufficient to supply all demands until about the middle of July. The daily mean discharge of Duck Lake Creek, a tributary, is presented in Table 14, page 54.

1979 Distribution

Watermaster service began in the French Creek service area on April 1 and continued until September 30. Lester L. Lighthall, Water Resources Technician II, was watermaster, except for the period July 3 to September 4 when Kenneth E. Morgan was watermaster.

Diversion Number	Name	m^3/s	ft^3/s
1,2,29	Fuglistaler	0.071	2.50
3,30	Danielson	0.059	2.08
4,33,35	Lewis	0.066	2.33
5,7,8,10	J. H. Ranch, Inc.	0.060	2.10
11	MacGowen, Byers	0.067	2.36
16	International Paper Co., Thompson	0.002	0.06
17	Beckman, J.A.F.M. Co., Fowles	0.207	7.32
18	Wilson	0.014	0.49
19	S. P. Land Co.	0.004	0.14
20	Oxley, Larsen, Jennings	0.006	0.23
23,40	Jennings	0.047	1.65
24	Wilson	0.003	0.12
36	Larsen	0.007	0.25
43	Oxley, Beckman, Webster	0.128	4.53
44	Oxley, Beckman	0.059	2.09
47	Oxley, Beckman, Webster	0.022	0.76
48	Spencer	0.022	0.76

Figure 9



DIVERSIONS FROM FRENCH CREEK WATERMASTER SERVICE AREA

Watermaster service was initiated in the 1969 season and data obtained since then showed that the available water supply was below normal.

The upper priority allotments were regulated in decreasing quantities to satisfy the upper third priority rights until the first of July when the third priorities were shut off. Second priorities were then decreased until August 8 when they received only 35 percent of their rights. The stream remained at this flow for the rest of the season.

Downstream first, second, and third priority allotments below the Milk House Ditch can rely on more dependable water supply than those of the upper users, due to return flows.

Water was released from Smith Lake (Siphon Lake) the middle of July for those on the North Fork French Creek Ditch with interest in the Smith Lake siphon. First, second, and third priority water was available in Miners Creek all season. No water was diverted from Duck Lake Creek or French Creek to Miners Creek this season.

FRENCH CREEK WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 14

DUCK LAKE CREEK TRIBUTARY TO FRENCH CREEK

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.198	7.0	0.312	11.0	0.283	10.0	0.091	3.2	0.023	0.8	0.025	0.9	1
2			0.198	7.0	0.312	11.0	0.312	11.0	0.085	3.0	0.023	0.8	0.028	1.0	2
3			0.198	7.0	0.396	14.0	0.312	11.0	0.079	2.8	0.023	0.8	0.023	0.8	3
4			0.190	6.7	0.396	14.0	0.312	11.0	0.068	2.4	0.023	0.8	0.023	0.8	4
5			0.198	7.0	0.623	22.0	0.283	10.0	0.068	2.4	0.023	0.8	0.023	0.8	5
6			0.198	7.0	0.425	15.0	0.272	9.6	0.068	2.4	0.023	0.8	0.023	0.8	6
7			0.204	7.2	0.368	13.0	0.249	8.8	0.062	2.2	0.020	0.7	0.023	0.8	7
8			0.204	7.2	0.312	11.0	0.212	7.5	0.062	2.2	0.020	0.7	0.023	0.8	8
9			0.204	7.2	0.283	10.0	0.198	7.0	0.068	2.4	0.020	0.7	0.023	0.8	9
10			0.190	6.7	0.278	9.8	0.190	6.7	0.068	2.4	0.020	0.7	0.023	0.8	10
11			0.181	6.4	0.312	11.0	0.204	7.2	0.057	2.0	0.020	0.7	0.020	0.7	11
12			0.170	6.0	0.368	13.0	0.212	7.5	0.051	1.8	0.020	0.7	0.020	0.7	12
13			0.181	6.4	0.425	15.0	0.198	7.0	0.042	1.5	0.020	0.7	0.020	0.7	13
14			0.190	6.7	0.510	18.0	0.181	6.4	0.034	1.2	0.020	0.7	0.020	0.7	14
15			0.190	6.7	0.566	20.0	0.176	6.2	0.034	1.2	0.020	0.7	0.020	0.7	15
16			0.212	7.5	0.566	20.0	0.176	6.2	0.031	1.1	0.020	0.7	0.020	0.7	16
17			0.190	6.7	0.538	19.0	0.204	7.2	0.031	1.1	0.020	0.7	0.020	0.7	17
18			0.176	6.2	0.538	19.0	0.204	7.2	0.031	1.1	0.020	0.7	0.020	0.7	18
19			0.161	5.7	0.595	21.0	0.181	6.4	0.028	1.0	0.020	0.7	0.020	0.7	19
20			0.153	5.4	0.651	23.0	0.161	5.7	0.025	0.9	0.023	0.8	0.020	0.7	20
21			0.170	6.0	0.708	25.0	0.153	5.4	0.025	0.9	0.023	0.8	0.023	0.8	21
22			0.204	7.2	0.623	22.0	0.147	5.2	0.025	0.9	0.023	0.8	0.023	0.8	22
23			0.198	7.0	0.538	19.0	0.142	5.0	0.025	0.9	0.020	0.7	0.023	0.8	23
24			0.190	6.7	0.510	18.0	0.136	4.8	0.023	0.8	0.020	0.7	0.023	0.8	24
25			0.198	7.0	0.481	17.0	0.127	4.5	0.023	0.8	0.020	0.7	0.028	1.0	25
26			0.255	9.0	0.481	17.0	0.122	4.3	0.023	0.8	0.020	0.7	0.031	1.1	26
27			0.283	10.0	0.453	16.0	0.116	4.1	0.023	0.8	0.020	0.7	0.028	1.0	27
28			0.283	10.0	0.425	15.0	0.102	3.6	0.023	0.8	0.020	0.7	0.025	0.9	28
29			0.312	11.0	0.340	12.0	0.096	3.4	0.023	0.8	0.025	0.9	0.025	0.9	29
30			0.312	11.0	0.312	11.0	0.091	3.2	0.023	0.8	0.025	0.9	0.023	0.8	30
31					0.283	10.0			0.023	0.8	0.023	0.8			31
MEAN			0.206	7.3	0.449	15.9	0.192	6.8	0.043	1.5	0.021	0.7	0.023	0.8	MEAN
DAM^3			535.		1203.		497.		116.		56.		59.		DAM^3
AC-FT				433.		975.		403.		94.		46.		48.	AC-FT

GOOSE VALLEY CREEK WATERMASTER SERVICE AREA

The Goose Valley Creek service area is situated in the northeast part of Shasta County, 10 km (6 mi) northwest of the town of Burney.

Basis of Service

The Goose Valley Creek watermaster service area, which consists of Lake Margaret (formerly known as Haynes Reservoir), was created on January 14, 1976.

The State Water Resources Control Board granted License 8943 to store 7 900 dam^3 (6,400 ac-ft) between about November 1 and April 1 of each year and a maximum withdrawal of 5 000 dam^3 (4,000 ac-ft) in any one year.

In the matter of License 8943 before the Water Resources Control Board, a stipulation and agreement dated December 9, 1975, between Pacific Gas and Electric Company and John and Margaret Casey, owners of Lake Margaret, is the basis for watermaster service between November 1 and June 1 of each year.

1979 Distribution

Watermaster service began for Lake Margaret on November 1, 1978. Kenneth E. Morgan, Water Resources Engineering Associate, was watermaster.

The following is a summary of Lake Margaret operations from November 1, 1978, to December 31, 1979.

LAKE MARGARET OPERATIONS

	Actual Storage		Right to Store	
Date	dam^3	ac-ft	dam^3	ac-ft
11/1/78	3 084	2,500	286	232
12/1/78	3 370	2,732	65	53
1/1/79	3 149	2,553	481	390
2/1/79	3 565	2,890	987	800
3/1/79	4 194	3,400	1 234	1,000
4/1/79	4 860	3,940	0	1/
5/1/79	4 749	3,850	0	1/
5/31/79	5 279	4,280	0	1/
Period of Release for Irrigation				
11/1/79	2 335	1,893	0	0
12/1/79	2 510	2,035	0	0
12/31/79	2 371	1,922	0	0

1/ Regulatory storage for irrigation from April 1 through May 31

HAT CREEK WATERMASTER SERVICE AREA

The Hat Creek service area is in the eastern part of Shasta County, north of Lassen Volcanic National Park. The maps, Figures 10 through 10b, pages 59 through 63, show the Hat Creek service area and stream system, including locations of the diversions of the upper and lower user groups.

Hat Creek, which flows in a northerly direction through the area, is the only source of water supply in the service area. The place of use is Hat Creek Valley, which is approximately 32 km (20 mi) long and 3.2 km (2 mi) wide, extending northward from about 4.8 km (3 mi) south of the town of Old Station to the confluence with Rising River. The irrigable lands, which consist primarily of volcanic ash, are interlaced with large outcroppings of volcanic rocks.

Basis of Service

Water from Hat Creek is distributed under provisions of court reference adjudications which resulted in Decree No. 5724, dated May 14, 1924, and Decree No. 7858, dated May 7, 1935, Shasta County Superior Court. Decree No. 5724 established irrigation and non-irrigation allotments for 18 periods of rotation between "upper" and "lower" user groups for the period of May 1 to October 28 annually. Decree No. 7858 established three allotments for continuous irrigation, May 1 through October 28, and allotments for the period October 28 to May 1 annually for all users. These latter rights are not normally supervised by the watermaster.

Watermaster service in the Hat Creek area has been provided in accordance with the decree since 1924. The existing service area was created on September 11, 1929.

Decree No. 5724 defines the allotments in the separate schedules: upper and lower users, requiring 10-day rotations beginning at 6 a.m., May 1, and terminating at 6 a.m., October 28. All water rights are of the same priority, with the surplus flows distributed according to the users that are on rotation. The upper users' water rights require 4.380 m^3/s (154.7 ft^3/s) and lower users require 4.715 m^3/s (166.5 ft^3/s). The lower users require more because of additional channel loss. When the upper users are being served, the lower users receive a minimum flow for stock water.

Water Supply

The water supply of Hat Creek comes from snowmelt runoff from Lassen Peak and from large springs. Snowmelt normally creates a high flow during May and June, but the substantial portion of the summer supply comes from large springs which decrease only slightly in output. Only after a series of dry years does the flow of these springs fall much below 75 percent of total allotments.

Method of Distribution

Most irrigation in the area is accomplished by wild flooding. Large heads of water are used to cover the land rapidly, thereby preventing excessive loss from percolation in the extremely porous soil. Diversion dams constructed across the creek serve to divert water into large ditches. The fields, many of which have checks and borders, are then flooded from the main diversion ditches or from laterals. A few domestic rights are met by pumping directly from Hat Creek.

1979 Distribution

The watermaster in the Hat Creek service area was Lee R. Gibson, Water Resources Technician II. Watermaster service was provided from May 1 through September 30.

Starting off the season, May 1 to June 22, all users upper and lower were on 100 percent water rights. Rains in May helped the soil moisture and kept Hat Creek at or above 100 percent flow.

The upper users began the first rotation on June 15 with 100 percent, but were cut to 90 percent by June 22. The first rotation to lower users was June 25 with only 70 percent. By July 10, the lower users were cut to 60 percent and upper users to 80 percent. This was followed for the rest of the season.

Hat Creek was checked out from upper to lower end to find out why there was a 20 percent difference between upper and lower users. There is a natural loss along the system, but it could not account for the 20 percent.

Hat Creek had dropped in flow to 3.28 m^3/s (116 ft^3/s), which is lower than any of the two drought years.

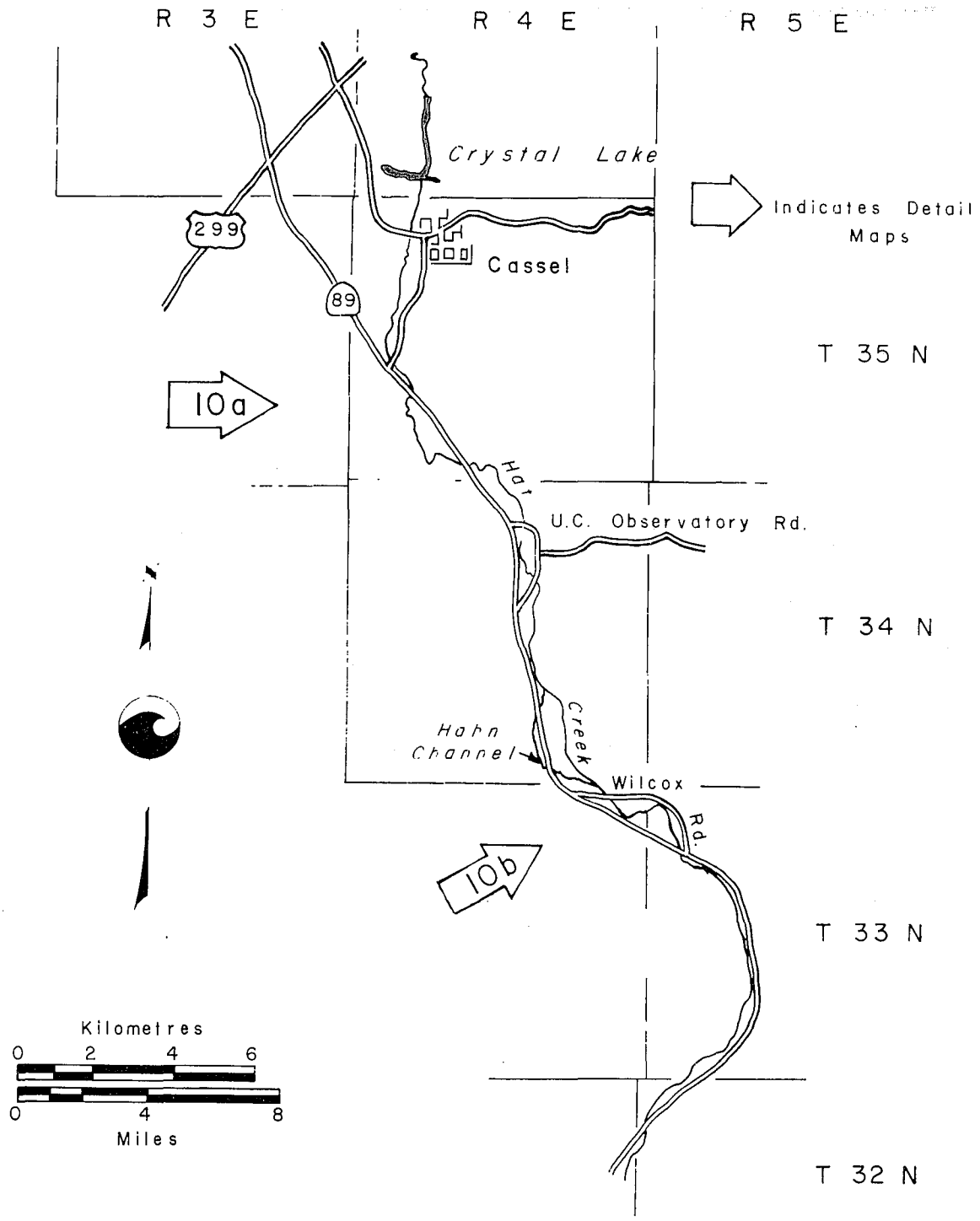
HAT CREEK WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 15

HAT CREEK NEAR HAT CREEK

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1	3.370	119.0	3.342	118.0	3.965	140.0	4.814	170.0	3.285	116.0	3.200	113.0	2.974	105.0	1
2	3.342	118.0	3.342	118.0	3.852	136.0	4.928	174.0	3.228	114.0	3.172	112.0	2.945	104.0	2
3	3.398	120.0	3.342	118.0	4.078	144.0	5.239	185.0	3.228	114.0	3.200	113.0	2.917	103.0	3
4	3.398	120.0	3.342	118.0	4.248	150.0	5.437	192.0	3.200	113.0	3.172	112.0	2.917	103.0	4
5	3.427	121.0	3.398	120.0	4.333	153.0	5.437	192.0	3.200	113.0	3.172	112.0	2.917	103.0	5
6	3.483	123.0	3.455	122.0	4.078	144.0	5.409	191.0	3.228	114.0	3.172	112.0	2.917	103.0	6
7	3.512	124.0	3.398	120.0	3.993	141.0	5.041	178.0	3.200	113.0	3.172	112.0	2.917	103.0	7
8	3.512	124.0	3.427	121.0	3.880	137.0	4.758	168.0	3.200	113.0	3.172	112.0	3.087	109.0	8
9	3.483	123.0	3.483	123.0	3.767	133.0	4.673	165.0	3.200	113.0	3.059	108.0	3.115	110.0	9
10	3.483	123.0	3.398	120.0	3.738	132.0	4.475	158.0	3.285	116.0	2.974	105.0	3.115	110.0	10
11	3.512	124.0	3.398	120.0	3.710	131.0	4.333	153.0	3.285	116.0	2.974	105.0	3.087	109.0	11
12	3.540	125.0	3.370	119.0	3.710	131.0	4.418	156.0	3.285	116.0	2.974	105.0	3.115	110.0	12
13	3.512	124.0	3.427	121.0	4.021	142.0	4.220	149.0	3.285	116.0	2.945	104.0	3.115	110.0	13
14	3.540	125.0	3.483	123.0	4.390	155.0	3.936	139.0	3.257	115.0	2.945	104.0	3.087	109.0	14
15	3.597	127.0	3.540	125.0	4.616	163.0	3.908	138.0	3.228	114.0	2.945	104.0	3.087	109.0	15
16	3.512	124.0	3.682	130.0	4.786	169.0	3.823	135.0	3.228	114.0	2.945	104.0	3.087	109.0	16
17	3.455	122.0	3.625	128.0	4.843	171.0	3.767	133.0	3.228	114.0	2.945	104.0	3.087	109.0	17
18	3.455	122.0	3.512	124.0	5.126	181.0	3.597	127.0	3.285	116.0	2.945	104.0	2.974	105.0	18
19	3.427	121.0	3.455	122.0	5.381	190.0	3.568	126.0	3.257	115.0	2.974	105.0	2.889	102.0	19
20	3.398	120.0	3.427	121.0	5.494	194.0	3.795	134.0	3.228	114.0	3.172	112.0	2.860	101.0	20
21	3.398	120.0	3.455	122.0	5.607	198.0	3.908	138.0	3.172	112.0	3.313	117.0	2.860	101.0	21
22	3.398	120.0	3.483	123.0	5.636	199.0	3.795	134.0	3.144	111.0	3.228	114.0	2.860	101.0	22
23	3.370	119.0	3.483	123.0	5.494	194.0	3.767	133.0	3.059	108.0	3.172	112.0	2.832	100.0	23
24	3.398	120.0	3.427	121.0	5.352	189.0	3.767	133.0	3.059	108.0	3.144	111.0	2.832	100.0	24
25	3.427	121.0	3.398	120.0	5.352	189.0	3.710	131.0	3.059	108.0	3.115	110.0	2.860	101.0	25
26	3.427	121.0	3.483	123.0	5.437	192.0	3.682	130.0	3.059	108.0	3.115	110.0	2.860	101.0	26
27	3.483	123.0	3.767	133.0	5.324	188.0	3.568	126.0	3.059	108.0	3.115	110.0	2.860	101.0	27
28	3.427	121.0	3.738	132.0	5.041	178.0	3.568	126.0	3.002	106.0	3.172	112.0	2.974	105.0	28
29	3.398	120.0	3.767	133.0	4.616	163.0	3.540	125.0	2.974	105.0	3.144	111.0	3.030	107.0	29
30	3.398	120.0	3.823	135.0	4.503	159.0	3.398	120.0	3.115	110.0	3.144	111.0	3.030	107.0	30
31	3.342	118.0			4.729	167.0			3.172	112.0	3.002	106.0			31
MEAN	3.446	121.7	3.489	123.2	4.616	163.0	4.209	148.6	3.184	112.4	3.093	109.2	2.974	105.0	MEAN
DAM^3	9223.		9037.		12355.		10903.		8521.		8279.		7702.		DAM^3
AC-FT		7477.		7327.		10017.		8839.		6908.		6712.		6244.	AC-FT

Figure 10



INDEX SHEET FOR HAT CREEK WATERMASTER SERVICE AREA

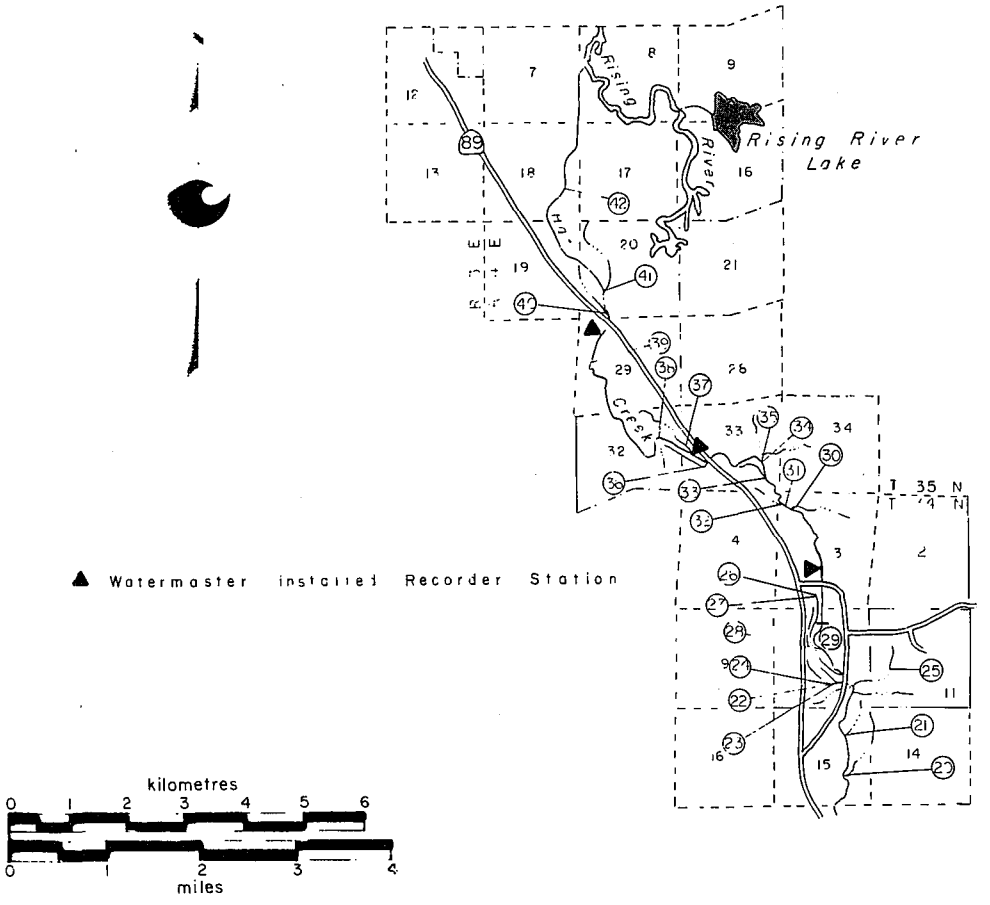
Diversion Number	Ditch	m^3/s	ft^3/s
20 21	H. & F. Lonquist, Upper H. & F. Lonquist, Lower	0.127	4.50[1/]
22	Reiger	0.198	7.00[2/]
23	Harry Lonquist	0.071	2.50[2/]
24	Morris, Upper	0.382	13.50[3/]
25	Morris, Lower	0.630	22.25[3/]
26	H. Lonquist-Reynolds-Bidwell	0.425	15.00[2/]
27	H. Lonquist-Reynolds, East Side	0.099	3.50[2/]
28	H. Lonquist-Reynolds, Middle	0.014	0.50
29	Reynolds Diversion	0.113	4.00[2/]
30	Jeff Bone, Upper (Indian, not in WSA)	0.014	0.50
31	Jeff Bone, Lower (Indian, not in WSA)	0.014	0.50
32	Lee Bone (Indian, not in WSA)	0.028	1.00
33	Julia Wilson (Indian, not in WSA)	0.156	5.50
34	Sam Williams (Indian, not in WSA)	0.021	0.75
35	Joe Wilson (Indian, not in WSA)	0.078	2.75
36	Ellen Brown, Upper	0.085	3.00
37	W. W. Brown-Ellen Brown	0.326	11.50
38	Ellen Brown, Lower	0.092	3.25
39	Charlie Snook	0.014	0.50
40	Doyel	0.566	20.00
41	Bertha Giessner	0.290	10.25
42	Otto Giessner	0.226	8.00
	DIRECT DIVERSIONS FROM HAT CREEK		
37a	Hat Creek	0.071	2.50
40a	Hat Creek	0.177	6.25
42a	Hat Creek	0.227	8.00

1/ Total water right
2/ Upper and Lower user
3/ Upper user

NOTE: Upper and Lower users are on a ten (10) day rotation. Minimum flows allowed in each ditch when not on irrigation schedule.

The above water rights do not include the mud flow right defined in Paragraphs 21 and 22 of the Hat Creek Decree.

Figure 10a



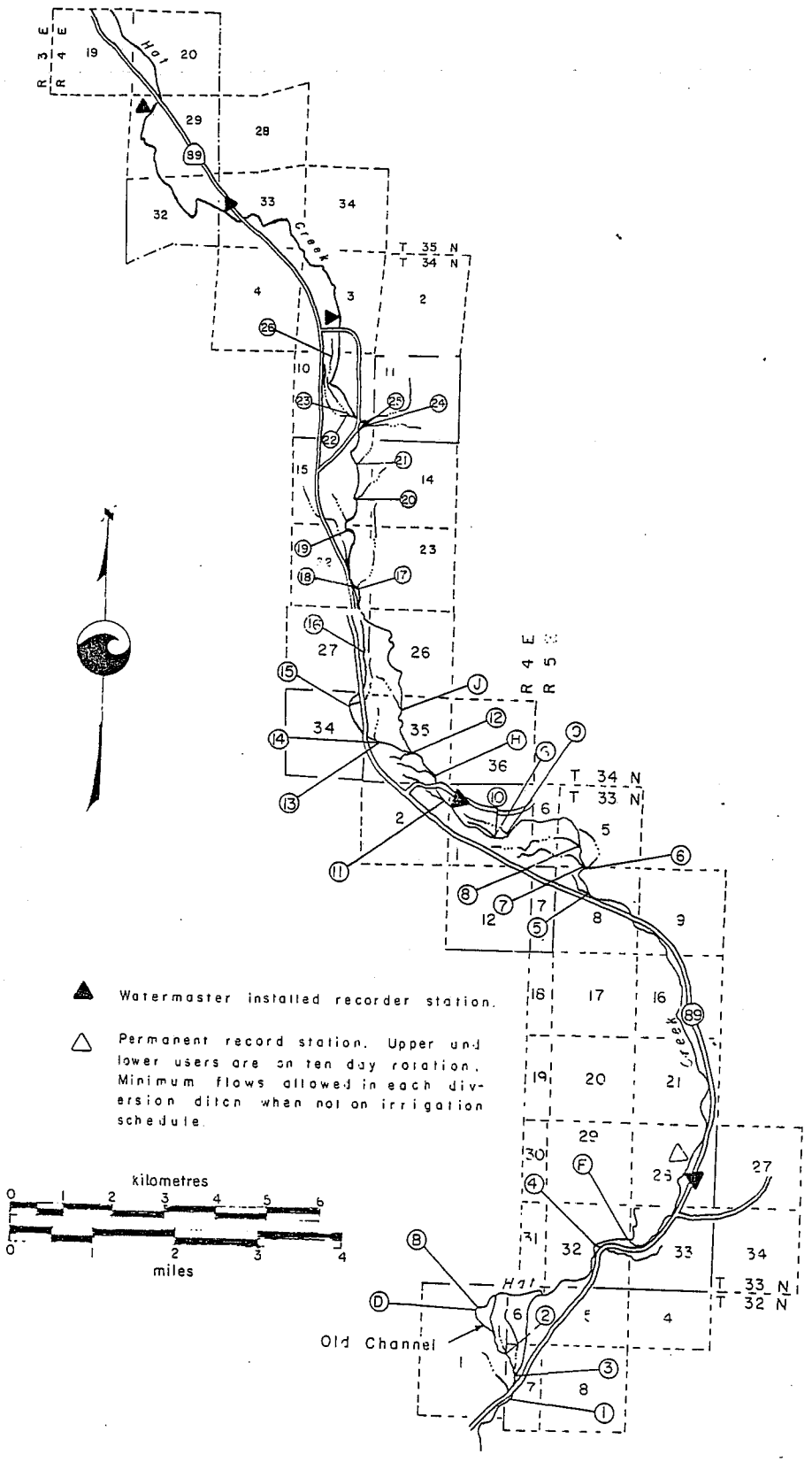
DIVERSIONS FROM LOWER HAT CREEK
HAT CREEK WATERMASTER SERVICE AREA

Diversion Number	Ditch	m^3/s	ft^3/s
1 2	Harvey Wilcox, Upper Harvey Wilcox, Lower	0.060	2.125
3	Stevenson	0.067	2.375
4	Hall	0.078	2.750
5	Aleck Brown	0.014	0.500
6	Hawkins	0.064	2.250
7	Harry Wilcox, Upper	0.202	7.125
8	Harry Wilcox	0.634	22.375
9	Rube Wilcox-Davis	0.142	5.000
10	Harry Wilcox, Lower	0.028	1.000
11	Valentine, Upper	0.014	0.500
12	Valentine, Lower	0.042	1.500
13	Heryford, Upper	0.014	0.500
14	Heryford, Middle	0.042	1.500
15	Heryford, Lower	0.014	0.500
16	Edith Snook	0.152	5.375
17	Ratledge-Henry Lonquist	0.152	5.375
18	Ratledge-Opdyke-USFS	0.191	6.750
19	Opdyke	0.340	12.000
20	H. & F. Lonquist, Upper	1/	1/
21	H. & F. Lonquist, Lower	1/	1/
22	Reiger	0.198	7.000 2/
23	Harry Lonquist	1/	1/
24	Morris, Upper	0.382	13.500
25	Morris, Lower	0.630	22.250
26	H. Lonquist-Reynolds-Bidwell	0.425	15.000
B	Consterdine	0.016	0.560
D	Stevenson	0.220	7.781
D,3	Total Allotment	0.293	10.356
F	Shearon	0.027	0.960
G,H	Grant, Lower	0.014	0.500
J	Domestic	0.014	0.500

1/ Lower Hat Creek users
2/ Both Lower and Upper Hat Creek users

NOTE: The above water rights do not include the mud flow right defined in Paragraphs 21 and 22 of the Hat Creek Decree.

Figure 10b



DIVERSIONS FROM UPPER HAT CREEK
HAT CREEK WATERMASTER SERVICE AREA

INDIAN CREEK WATERMASTER SERVICE AREA

The Indian Creek service area is located in the north central part of Plumas County, in the vicinity of Greenville.

The major sources of supply in the service area are Indian Creek and two tributaries, Wolf Creek and Lights Creek. Indian Creek and its minor tributaries rise in the mountains east of the service area. It then flows through Genesse and Indian Valleys and past Taylorsville and Crescent Mills to its confluence with the North Fork Feather River. Indian Creek is joined on the north by Lights Creek in southeast Indian Valley and by Wolf Creek in the northwest part of the valley. The major place of use is in Indian Valley, an irregular-shaped area of about 50 km^2 (20 mi^2). The average elevation is about 1 100 m (3,500 ft).

Maps of the whole area and of each major stream system within the Indian Creek service area are presented as Figures 11 through 11c, pages 67 through 73.

Basis of Service

The Indian Creek watermaster service area was created on February 19, 1951, to include, with certain exceptions, the water rights set forth in Decree No. 4185, entered December 19, 1950, by the Superior Court of Plumas County, and the rights under Permit 7665 issued in approval of Application 12642 subsequent to entry of the decree. The statutory proceeding leading to the decree was entitled "In the Matter of the Determination of the Rights of the Various Claimants to the Water of Indian Creek Stream System in Plumas County, California".

The service area has been amended twice. Watermaster service has been provided during each irrigation season since the service area was created, and annual reports show the work accomplished. There are currently 47 water right owners in the service area with total allotments amounting to 2.7234 m^3/s (96.715 ft^3/s). Indian Creek decree establishes three priority classes for each of the major stream systems within the service area.

Water Supply

The water supply in the Indian Creek service area comes mainly from snowmelt runoff, with springs and seepage maintaining some late summer flows. The flow of Wolf Creek is normally sufficient to supply all allotments until June 1. Indian and Lights Creeks, with the exception of some tributaries, have sufficient flow to supply all allotments until July 1. After these dates, flows decrease throughout the season until, by the end of August, only a small portion of allotments is available.

A record of the daily mean discharge of Indian Creek, near Taylorsville, where Indian Creek enters the valley, is presented in Table 16, page 66.

Method of Distribution

The basic method of irrigation in Indian Valley is wild flooding. Small diversion dams are constructed in the stream channels to divert water into distribution ditches for conveyance to the fields. Small check dams, located throughout the fields in swales, help to spread the water over the ground. There is a limited amount of check and border irrigation in the valley, and few sprinkler systems are in use.

1979 Distribution

Watermaster service began in the Indian Creek service area on May 1 and continued until October 5, with Earl F. Stower, Water Resources Engineering Associate, as watermaster. The available supply in the service area was below average during the season.

Wolf Creek. The available water supply of Wolf Creek was sufficient to satisfy all allotments (three priorities) until July 1. The streamflow gradually decreased until only first and 11 percent of second priorities were available by the end of July, and remained at about that level through August.

Lights Creek and Tributaries. The available water supply of Lights Creek was sufficient to satisfy all allotments (three priorities) through June. Surface flow at the county road stopped by July 5. On Cooks Creek, the surface flow at Diversion 81 ceased by the first of August.

Indian Creek. The available water supply of Indian Creek was sufficient to satisfy all allotments (three priorities) until the end of June. The supply gradually dropped to a low of 31 percent of second priority on August 27. Diversion at No. 55 resumed this season. Accretions below Diversion No. 55 were sufficient to meet other downstream allotments.

Special Occurrences

Because of low runoff, the trial reoperation of Antelope Dam was modified. Minimum releases were reduced from 0.6 to 0.3 m^3/s (20 to 10 ft^3/s). The release was routed by Diversions 36, 54 and 55.

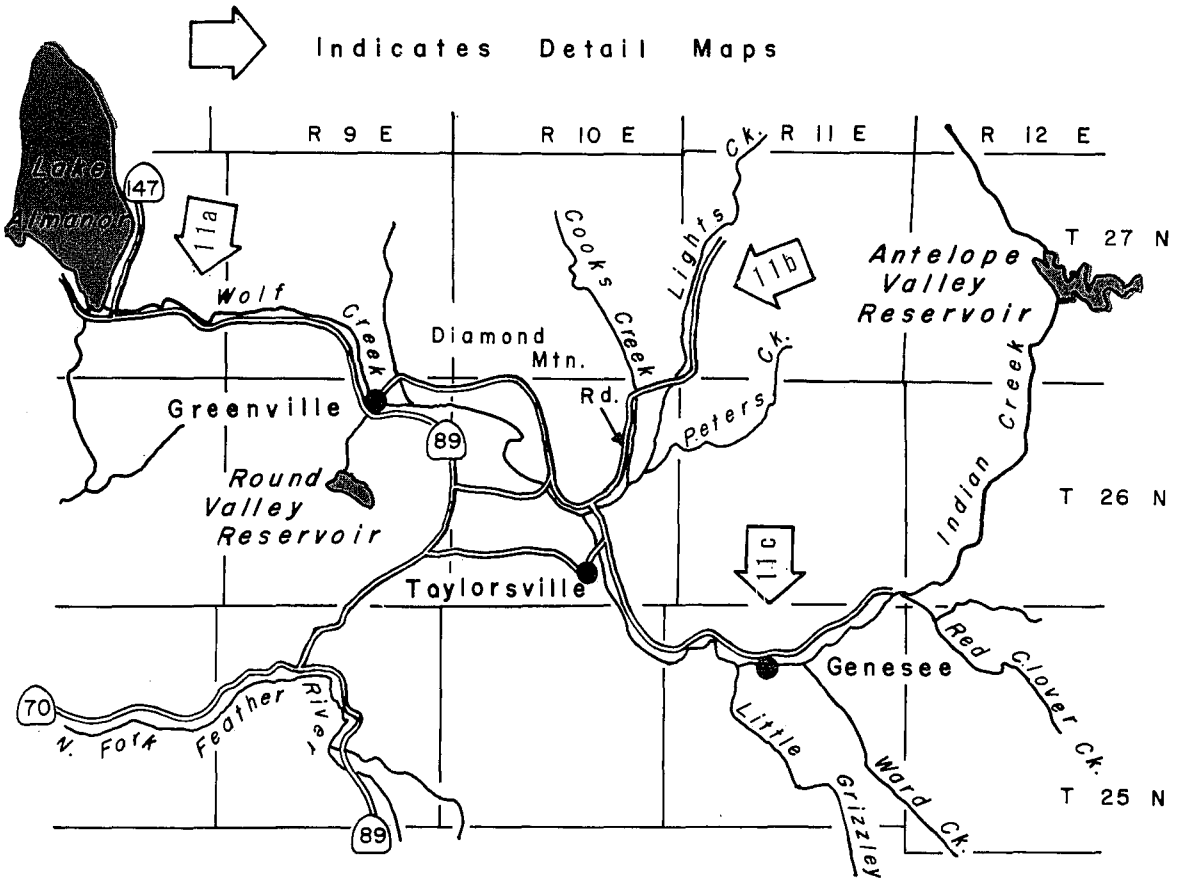
INDIAN CREEK WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 16

INDIAN CREEK NEAR TAYLORSVILLE

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1	3.398	120.0	8.638	305.0	8.666	306.0	5.324	188.0	1.408	49.7	0.926	32.7	1.045	36.9	1
2	2.917	103.0	7.986	282.0	8.326	294.0	4.928	174.0	1.365	48.2	0.926	32.7	0.997	35.2	2
3	3.002	106.0	7.392	261.0	8.609	304.0	4.729	167.0	1.331	47.0	0.926	32.7	0.966	34.1	3
4	3.002	106.0	7.307	258.0	9.232	326.0	4.390	155.0	1.300	45.9	0.923	32.6	0.966	34.1	4
5	3.370	119.0	8.213	290.0	11.215	396.0	4.333	153.0	1.300	45.9	0.906	32.0	0.966	34.1	5
6	5.919	209.0	10.988	388.0	12.517	442.0	4.135	146.0	1.294	45.7	0.906	32.0	0.966	34.1	6
7	11.073	391.0	10.393	367.0	12.942	457.0	3.738	132.0	1.260	44.5	0.906	32.0	0.966	34.1	7
8	13.820	488.0	9.770	345.0	13.622	481.0	3.512	124.0	1.260	44.5	0.906	32.0	0.952	33.6	8
9	13.933	492.0	9.629	340.0	13.339	471.0	3.285	116.0	1.249	44.1	0.906	32.0	0.926	32.7	9
10	13.339	471.0	8.921	315.0	12.744	450.0	3.115	110.0	1.221	43.1	0.906	32.0	0.923	32.6	10
11	12.716	449.0	8.269	292.0	11.385	402.0	2.917	103.0	1.201	42.4	0.901	31.8	0.889	31.4	11
12	13.849	489.0	8.128	287.0	11.328	400.0	2.792	98.6	1.201	42.4	0.881	31.1	2.688	94.9	12
13	13.339	471.0	8.666	306.0	11.809	417.0	2.614	92.3	1.184	41.8	0.867	30.6	0.867	30.6	13
14	13.141	464.0	9.346	330.0	11.979	423.0	2.478	87.5	1.158	40.9	0.867	30.6	0.855	30.2	14
15	13.594	480.0	9.600	339.0	12.206	431.0	2.472	87.3	1.124	39.7	0.867	30.6	0.847	29.9	15
16	13.594	480.0	9.827	347.0	12.659	447.0	2.407	85.0	1.104	39.0	0.867	30.6	0.847	29.9	16
17	10.082	356.0	9.685	342.0	11.611	410.0	2.917	103.0	1.104	39.0	0.867	30.6	0.838	29.6	17
18	8.383	296.0	9.034	319.0	11.498	406.0	2.801	98.9	1.079	38.1	0.861	30.4	1.008	35.6	18
19	7.760	274.0	8.043	284.0	11.328	400.0	2.419	85.4	1.054	37.2	0.847	29.9	0.753	26.6	19
20	7.250	256.0	7.137	252.0	15.661	553.0	2.300	81.2	1.005	35.5	0.847	29.9	0.731	25.8	20
21	6.797	240.0	6.655	235.0	11.271	398.0	2.141	75.6	1.005	35.5	0.847	29.9	0.722	25.5	21
22	6.599	233.0	6.627	234.0	11.753	415.0	1.971	69.6	1.025	36.2	0.847	29.9	0.711	25.1	22
23	6.145	217.0	6.797	240.0	10.195	360.0	1.914	67.6	1.065	37.6	0.847	29.9	0.750	26.5	23
24	6.032	213.0	7.448	263.0	9.317	329.0	1.810	63.9	1.065	37.6	0.810	28.6	0.790	27.9	24
25	6.457	228.0	7.307	258.0	8.892	314.0	1.770	62.5	1.065	37.6	0.810	28.6	2.566	90.6	25
26	6.684	236.0	7.675	271.0	8.751	309.0	1.781	62.9	1.065	37.6	0.810	28.6	4.560	161.0	26
27	9.459	334.0	10.167	359.0	8.524	301.0	1.654	58.4	1.062	37.5	0.810	28.6	2.353	83.1	27
28	11.441	404.0	9.799	346.0	7.986	282.0	1.589	56.1	1.045	36.9	0.801	28.3	0.886	31.3	28
29	11.781	416.0	9.176	324.0	7.193	254.0	1.552	54.8	1.039	36.7	0.878	31.0	0.906	32.0	29
30	11.696	413.0	8.977	317.0	6.400	226.0	1.490	52.6	0.954	33.7	1.025	36.2	0.901	31.8	30
31	9.431	333.0			5.806	205.0			0.926	32.7	1.104	39.0			31
MEAN	9.032	318.9	8.587	303.2	10.605	374.5	2.843	100.4	1.146	40.5	0.884	31.2	1.171	41.4	MEAN
DAM^3	24175.		22241.		28386.		7363.		3067.		2365.		3034.		DAM^3
AC-FT		19599.		18031.		23013.		5969.		2486.		1918.		2460.	AC-FT

Figure 11



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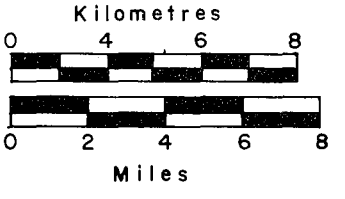
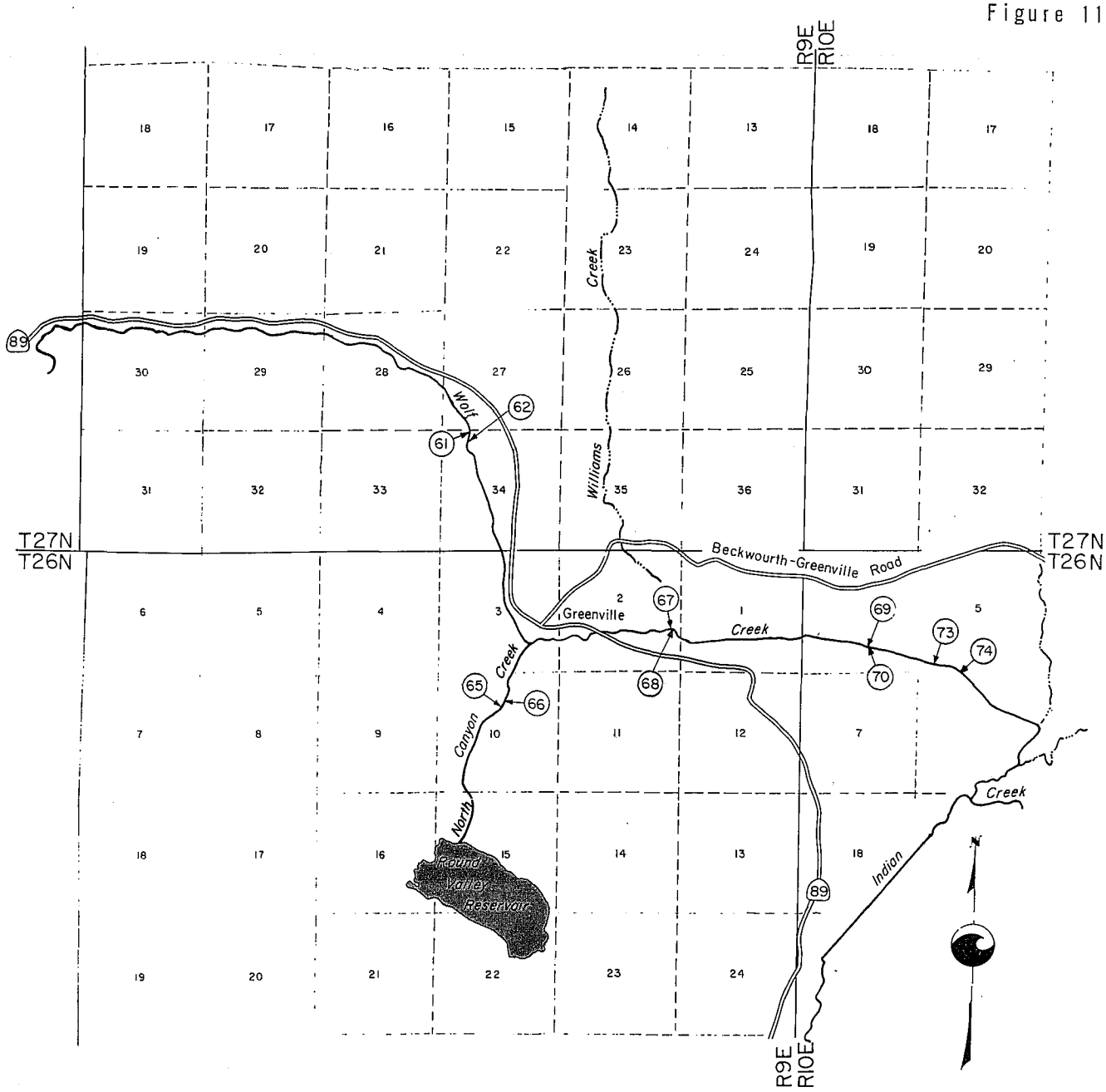


INDEX MAP
DIVERSIONS FROM INDIAN CREEK
WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
61	McMullen	0.0028	0.10
62	Wattenberg	0.0079	0.28
	Hollingsworth	0.0198	0.70
65	Bidwell	0.0057	0.20
66	Embree	0.0051	0.18
	Rilea	0.0020	0.07
	Colagross	0.0006	0.02
	Lanning	0.0004	0.013
	Trombly	0.0010	0.034
	Santoni	0.0052	0.183
67	Leininger	0.0198	0.70
	Duensing	0.0255	0.90
	Posch	0.0765	2.70
	Meyer	0.0198	0.70
	Thompson	0.0228	0.805
	Meyer	0.0052	0.183
	Micheal	0.0011	0.04
	Hatch	0.0006	0.022
68	Frederickson	0.0637	2.25
69	Sheehan	0.0496	1.75
70	Guidici	0.1090	3.85
73	Wheelock	0.0283	1.00
74	Rogers	0.0396	1.40

Figure 11a



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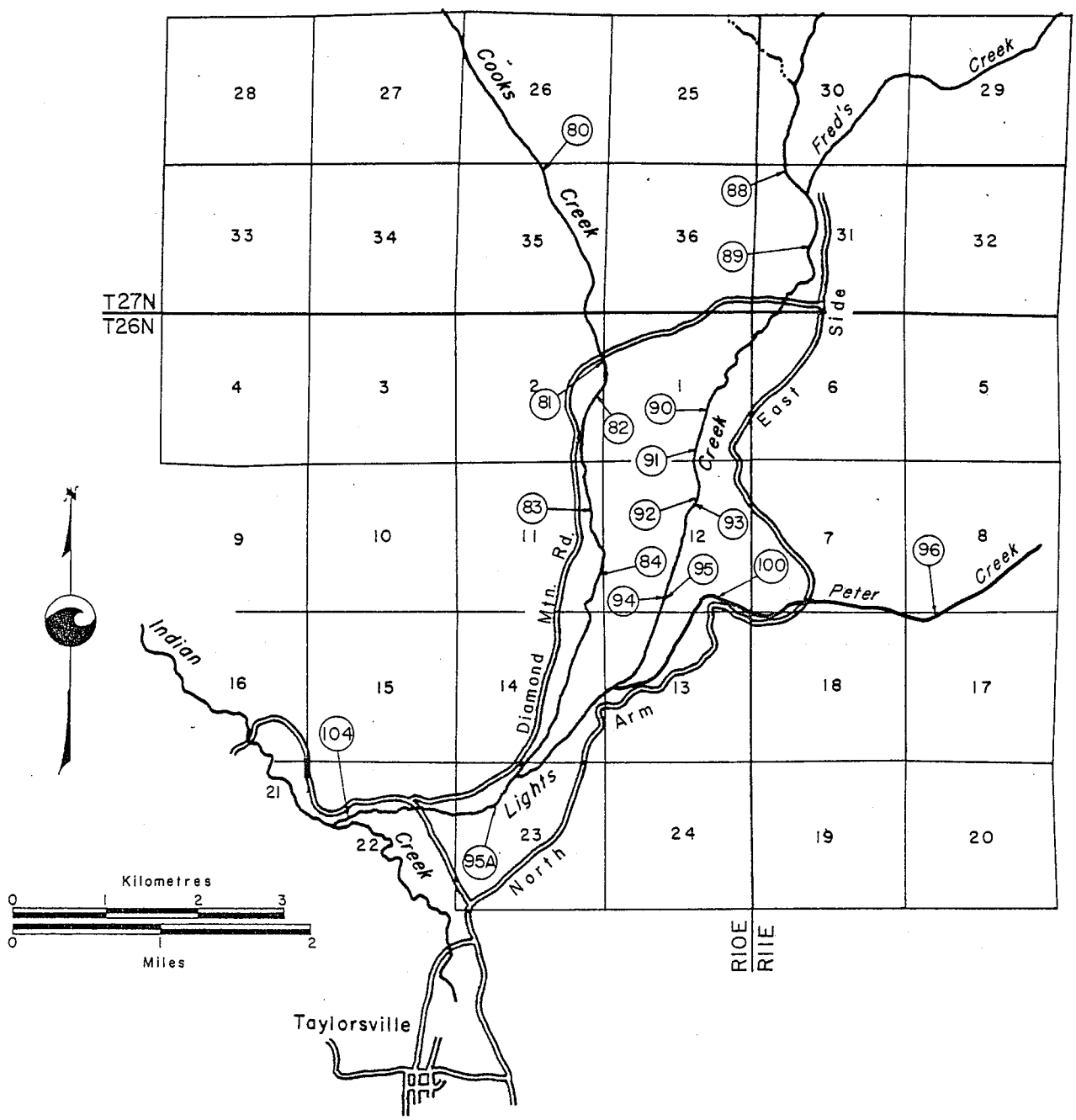
DIVERSIONS FROM WOLF CREEK
INDIAN CREEK WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
80	American Exploratory Co.	0.042	1.50
8	Radcliffe-Smith	0.028	1.00
82	Foor	0.013	0.45
83	Foor	0.008	0.30
84	Foor	0.013	0.45
88	Foor	0.082	2.90
89	Radcliffe-Smith	0.027	0.95
	Defanti	0.081	2.85
90	Foor	0.034	1.20
91	Foor	0.088	3.10
92	Foor	0.054	1.90
93	Foor	0.038	1.35
	Peter	0.016	0.55
94	Foor	0.024	0.85
	Adams	0.042	1.475
95	Foor	0.033	1.175
95a	Baker	0.001	0.05
96	Peter	0.057	2.00
100	Foor	0.006	0.20
	Awbrey	0.005	0.185
104	Hunt	0.001	0.015

Figure 11b

(Served by: Department Water Resources—Central District, Watermaster Servi

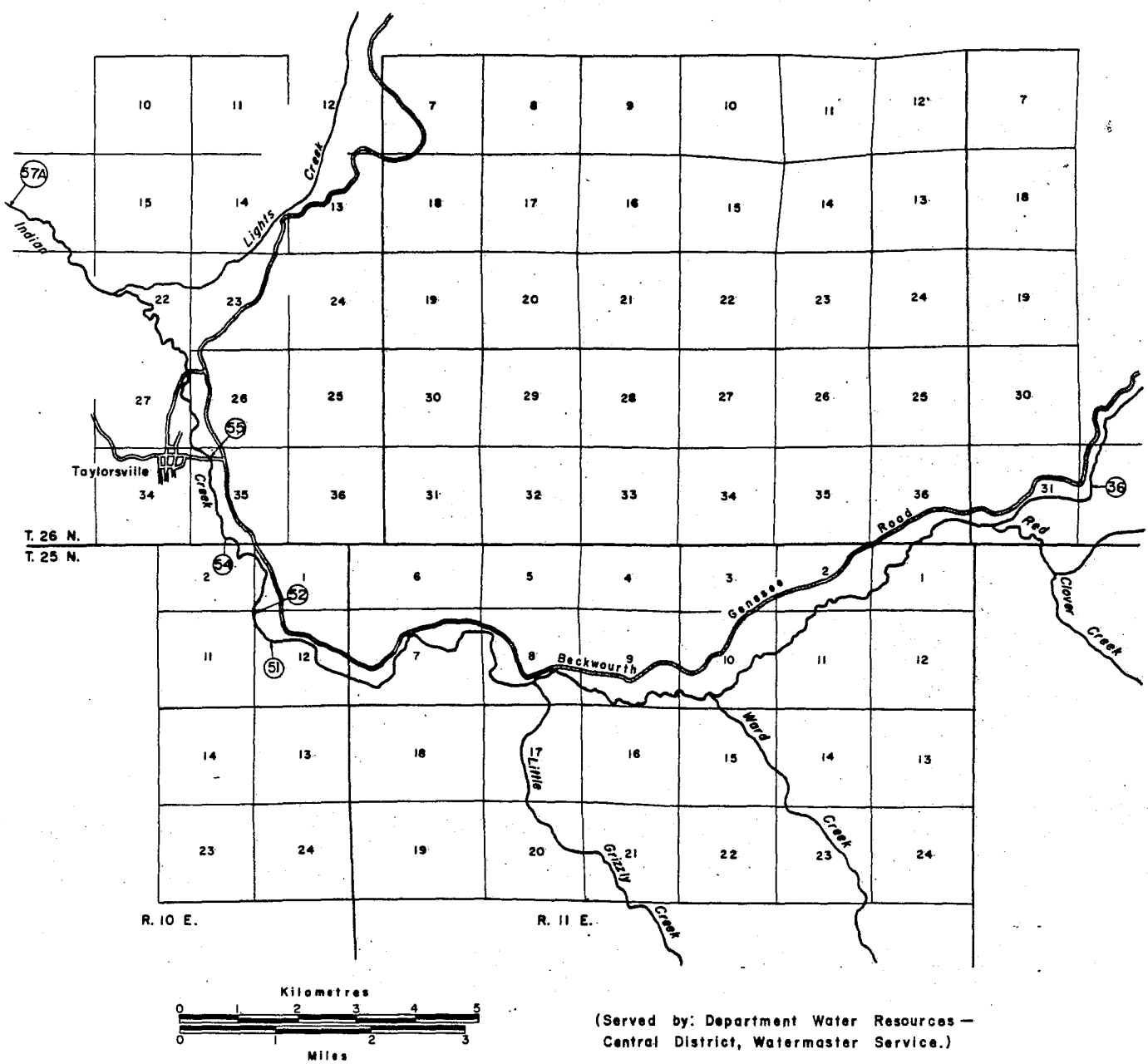


DIVERSIONS FROM LIGHTS CREEK
INDIAN CREEK WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
36	Wilbur	1.565	55.28
51-52	Page	0.038	1.33*
54	Mill Race Ditch	1.198	42.30
	Brown		
	Brown		
	Crenshaw et al		
	Foster		
	Johnson		
	Leininger		
	Leininger		
	Matz		
	Neer, Eve		
	Neer, Eve		
	Pearce		
	Probst		
	Scudder		
	Young		
55	Baker	0.096	3.40
57a	Neer, F. C.	0.071	2.50

* Diversion at 51 may also be diverted at 52.

Figure 11c



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DIVERSONS FROM INDIAN CREEK AND UPPER TRIBUTARIES INDIAN CREEK WATERMASTER SERVICE AREA

JUNIPER CREEK WATERMASTER SERVICE AREA

The Juniper Creek service area is situated in the northwest part of Lassen County, south and east of the town of Bieber, in Big Valley (see Figure 3).

Basis of Service

The Juniper Creek watermaster service area, which consists of Iverson Reservoir, was created on January 14, 1976. On November 24, 1964, water right application 20916 was granted by the Water Resources Control Board for the storage of 2 200 dam^3 (1,800 ac-ft) for Iverson Reservoir.

In the matter of application 20916, a stipulation and agreement, dated July 17, 1964, between applicant John McArthur and the Pacific Gas and Electric Company is the basis of watermaster service. Watermaster service is provided between November 1 and May 1 of each year.

1979 Distribution

Watermaster service began in the Juniper Creek watermaster area on November 1, 1978, with Kenneth E. Morgan, Water Resources Engineering Associate, as watermaster.

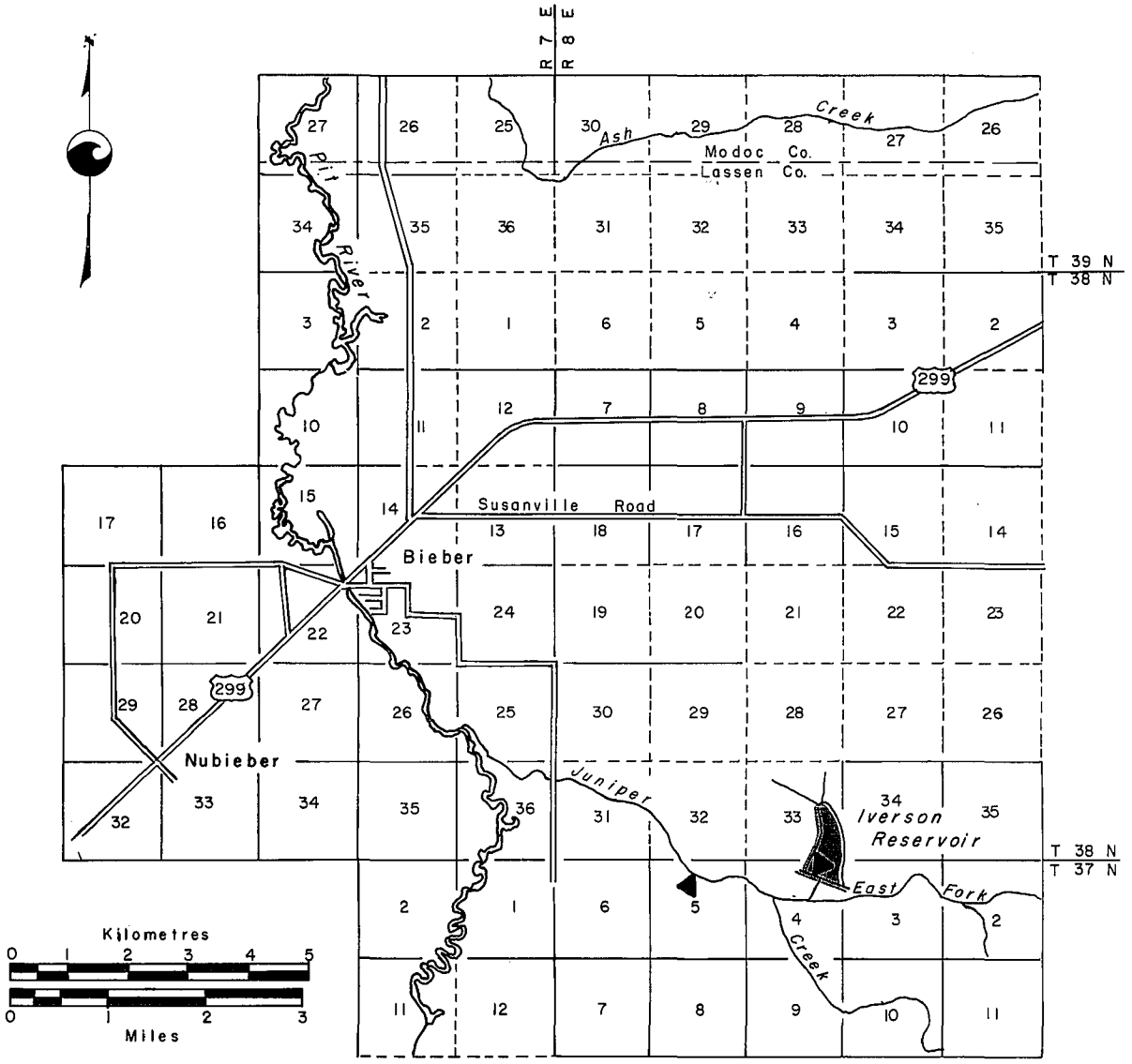
A clarification of the July 17, 1964, stipulation and agreement has not been reached between the owners of Iverson Reservoir and PGandE in regard to the right to store in Iverson Reservoir.

IVERSON RESERVOIR OPERATIONS

	Storage		Releases	
Date	dam^3	ac-ft	dam^3	ac-ft
11/1/78	595	482	0	0
12/1/78	543	440 1/	0	0
12/31/77	506	410 1/	0	0
1/20/78	506	410	0	0
2/1/79	740	600	0	0
3/1/79	1 017	825	0	0
3/15/79 2/	2 220	1,800	1 988	1,612
11/1/79	232	188	0	0
12/1/79	323	262	0	0
12/31/79	363	294	0	0

1/ Loss due to seepage and evaporation

2/ Reservoir filled to capacity



Iverson Reservoir Capacity 2.2 hm^3 (1 800 A/F)

▲ Watermaster installed recorder station

DIVERSIONS FROM IVERSON RESERVOIR JUNIPER CREEK WATERMASTER SERVICE AREA

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

The Middle Fork Feather River service area is located in Sierra Valley, a plateau area on the west slope of the Sierra Nevada Mountains in the eastern portion of Sierra and Plumas Counties.

Major sources of supply for this service area are the Middle Fork Feather River and its tributaries in the Sierra Valley. The area is comprised of five major stream groups. Starting in the northeast corner of the valley and proceeding in a clockwise direction, these are: Little Last Chance Creek, Smithneck Creek, Webber Creek and tributaries, West Side Canal, and Fletcher Creek and Spring Channels. The Middle Fork Feather River flows generally north for approximately 25 km (15 mi) through Sierra Valley. It then flows out of the valley in a westerly direction near Beckworth. The major place of use is in Sierra Valley, which is about 25 km (15 mi) long and 15 km (10 mi) wide. The average elevation of the valley floor is 1 500 m (4,900 ft).

Maps of the Middle Fork Feather River service area are presented as Figures 13 through 13k, pages 79 through 90.

Basis of Service

The Middle Fork Feather River watermaster service area was created on March 29, 1940, to include, with the exception of certain tributaries and springs, all water rights set forth in Decree No. 3095, entered in the Middle Fork Feather River statutory adjudication proceeding on January 19, 1940, Superior Court, Plumas County. The decree establishes the number of priority classes for each of the major stream systems within the Middle Fork Feather River service area as follows: Little Last Chance Creek, eight; Smithneck Creek, five; West Side Canal Group, five; Fletcher Creek and Spring Channels, three; Webber Creek and tributaries, six; and Sierra Valley Water Company, one.

The service area has been amended three times. Watermaster service has been provided during each irrigation season since the service area was created, and annual reports have been prepared to show the work accomplished.

There are currently 103 water right owners in the service area, with total allotments amounting to 10.536 m^3/s (372.079 ft^3/s).

Water Supply

The major water supply in the Middle Fork Feather River service area comes from snowmelt runoff, with minor flow from springs and supplemental stored and foreign water.

Natural flows of Little Last Chance Creek are supplemented by reservoir storage provided by Frenchman Dam, which was constructed by the Department of Water Resources in 1961. Stored water is released and used as needed under the provisions of an annual contract.

Smithneck Creek flow is normally sufficient to supply all allotments until about the middle of May. It then decreases until about June 1 when only first and second priority allotments are available for the rest of the season.

The natural flow of Webber Creek is normally sufficient to supply all allotments until the middle of May. At that time, up to 1.7 m^3/s (60 ft^3/s) is diverted from the Little Truckee River to supplement the flow. This imported water is diverted through the Little Truckee Ditch into Onion Creek and then into Webber Creek, via Cold Stream, for use of shareholders in the Sierra Valley Water Company. This supplemental supply decreases rapidly in July, producing only a small quantity during the latter part of the season.

The West Side Canal streams normally supply all allotments until the first part of June. The flow then gradually declines throughout the season.

The flow of Fletcher Creek and Spring Channels normally supplies all allotments until July 1. It then gradually declines for the remainder of the season.

Records of the daily mean discharge of Little Truckee Ditch and the Middle Fork Feather River near Portola are presented in Tables 17 and 18, page 91.

Method of Distribution

Wild flooding is employed by most of the water users to irrigate their fields. Small diversion dams are placed in the stream channels to divert the water into individual distribution systems. Check dams are constructed in the swales to implement flooding once the water reaches the fields.

1979 Distribution

Watermaster service began March 15, in the Middle Fork Feather River service area, and continued until September 30. Joe Nessler, Water Resources Engineering Associate, was Supervising Watermaster during this period. Conrad Lahr, Water Resources Engineering Associate, assisted as watermaster. The available supply in the service area was below average during the season.

Little Last Chance Creek. Frenchman Dam and Reservoir began its eighteenth season of operation. A five-year contract concerning storage, distribution, and sale of water was negotiated with the Last Chance Creek Water District. Delivery and distribution of water were made in accordance with the provisions of the contract and the instructions of the District's Board of Directors.

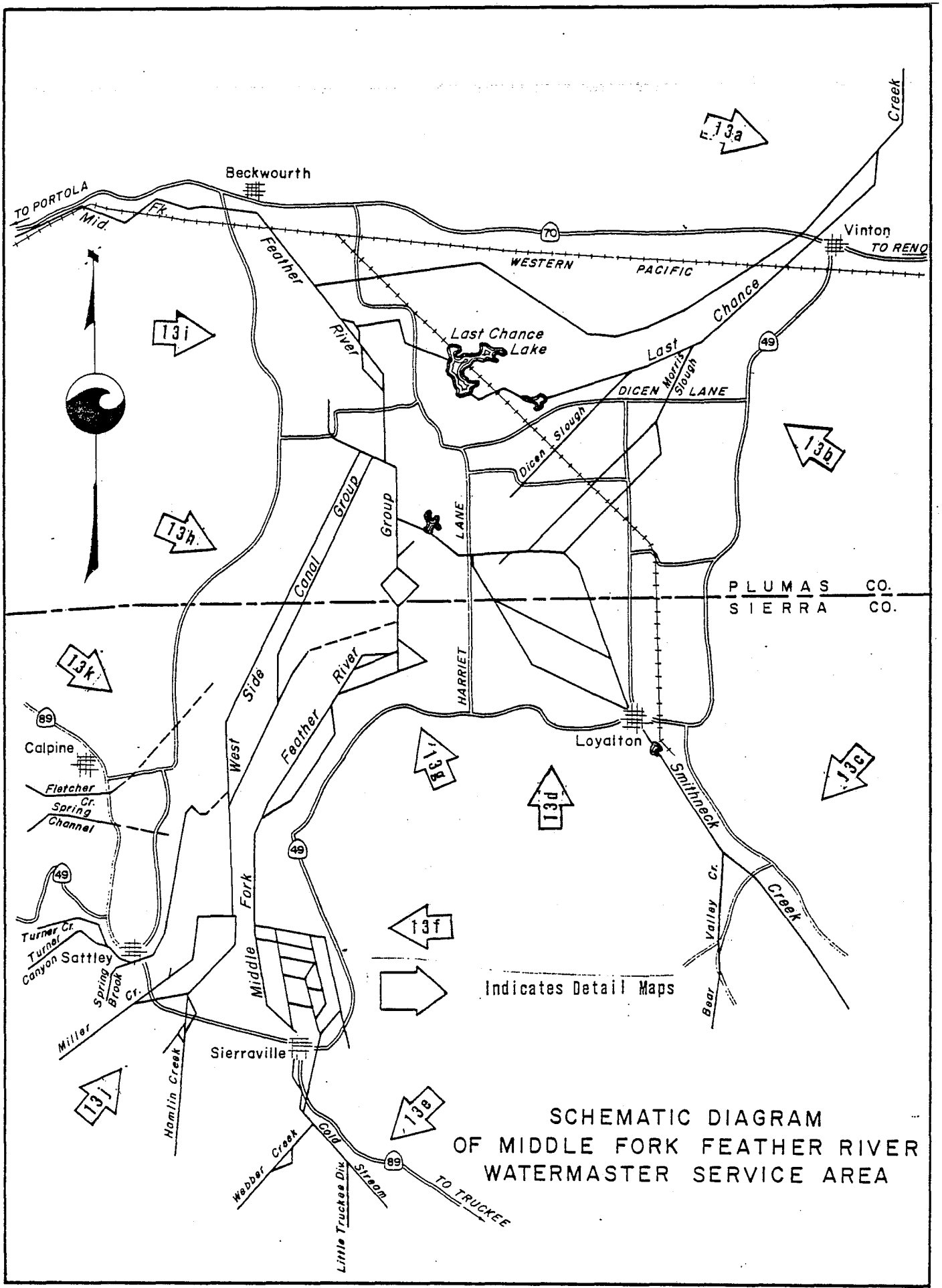
Smithneck Creek. Sufficient water was available in the system to satisfy all needs until the first part of May. A two-week rotation schedule for first and second priority users below Loyalton was started May 2, and continued for four rotations. Thereafter, an insufficient quantity of water was available for effective rotation.

Webber Creek and Tributaries. The natural flow of Webber Creek was sufficient to supply all allotments (six priorities) until the early part of May. The flow decreased for the remainder of the season with only enough water to supply first and part of second priority. Importation of water from the Little Truckee River began May 4, supplementing the natural flow of Webber Creek to help satisfy all allotments of the Sierra Valley Water Company shareholders (one priority). A total of 7 769 dam^3 (6,298 ac-ft) of water was diverted through the Little Truckee Ditch up to September 30. This diversion provided sufficient water until about July 1.

West Side Canal Group. The available water supply in the West Side Canal Group, consisting of Hamlin, Miller, and Turner Creeks, was sufficient to satisfy all allotments (five priorities) until about July 1.

Fletcher Creek and Spring Channels. Ample water was available to satisfy all allotments until mid-July. The flow decreased gradually until first and about 50 percent of second priorities were available by the end of the season.

Figure 13

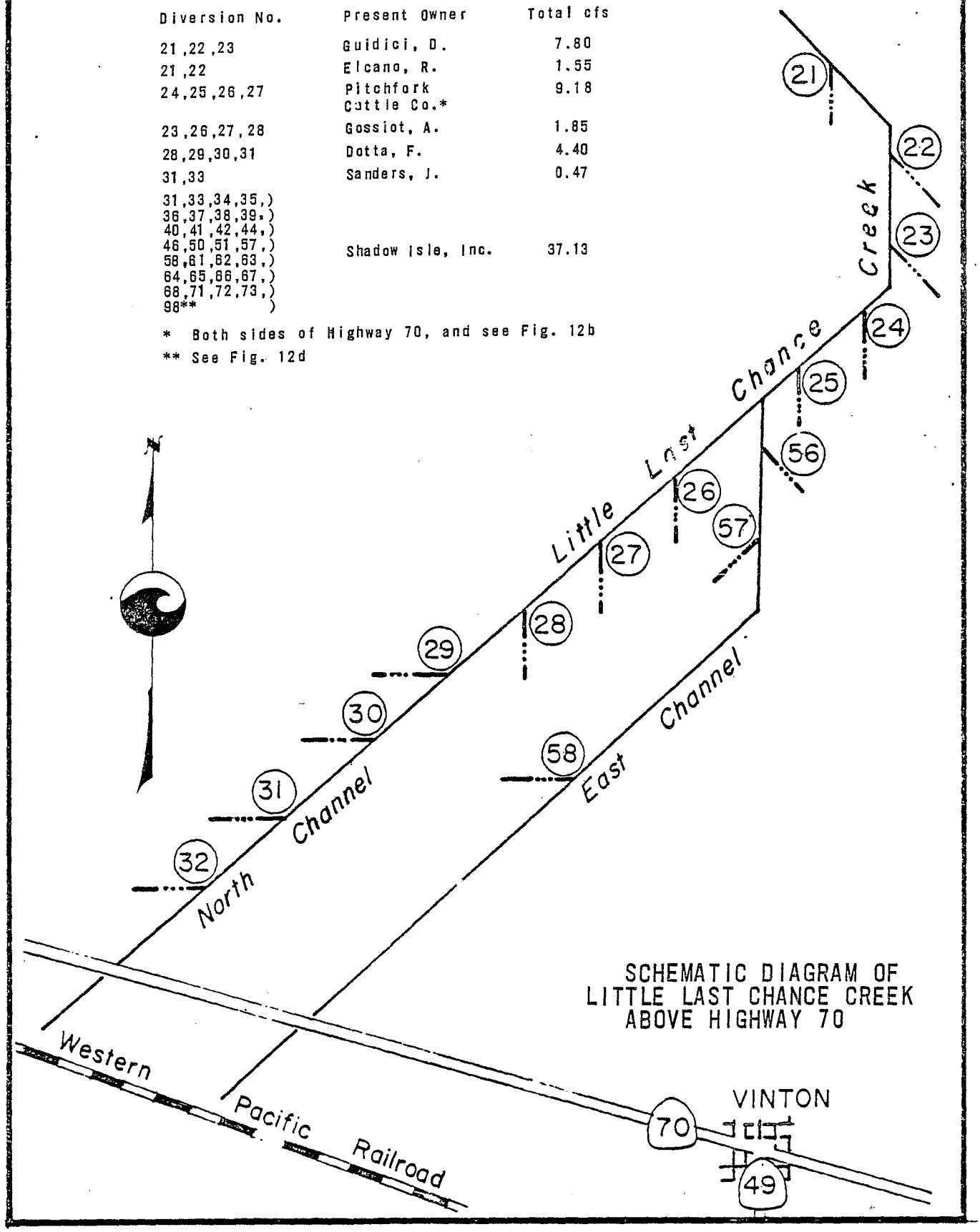

Beckwourth
TO PORTOLA
Mid. Fk.
Feather River
70
WESTERN PACIFIC
Vinton
TO RENO
Creek
13a
13i
Last Chance Lake
Last Chance
Morris Slough
DICEN LANE
Dicen Slough
49
13b
13h
Canal Group
Group
LANE
PLUMAS CO.
SIERRA CO.
13k
West Side
Feather River
HARRIET
Loyalton
89
Calpine
Fletcher Cr.
Spring Channel
13g
13d
13c
Smithneck Creek
Valley Cr.
Bear
Fork
Middle
13f
Turner Cr.
Turner Canyon
Sattley
Spring Brook Cr.
Miller
Indicates Detail Maps
Sierraville
Hamlin Creek
13j
13e
Webber Creek
Cold Stream
Little Truckee Div.
TO TRUCKEE
SCHEMATIC DIAGRAM
OF MIDDLE FORK FEATHER RIVER
WATERMASTER SERVICE AREA

ALLOCATIONS FROM LITTLE LAST CHANCE CREEK
ABOVE HIGHWAY 70

Diversion No.	Present Owner	Total cfs
21,22,23	Guidici, D.	7.80
21,22	Elcano, R.	1.55
24,25,26,27	Pitchfork Cattle Co.*	9.18
23,26,27,28	Gossiot, A.	1.85
28,29,30,31	Dotta, F.	4.40
31,33	Sanders, J.	0.47
31,33,34,35,) 36,37,38,39,) 40,41,42,44,) 46,50,51,57,) 58,61,62,63,) 64,65,66,67,) 68,71,72,73,) 98**)	Shadow Isle, Inc.	37.13

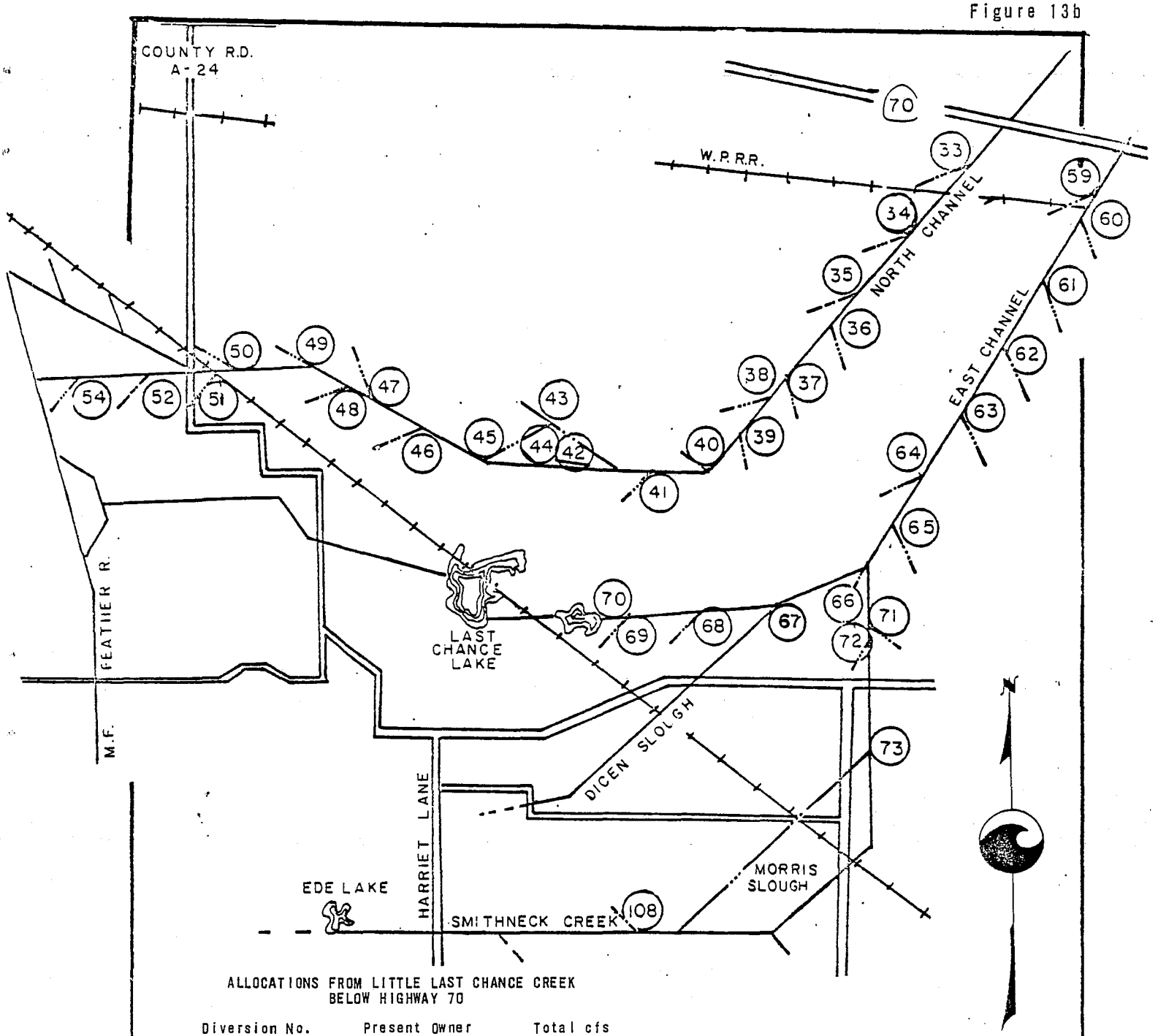
* Both sides of Highway 70, and see Fig. 12b

** See Fig. 12d



SCHEMATIC DIAGRAM OF
LITTLE LAST CHANCE CREEK
ABOVE HIGHWAY 70

Figure 13b

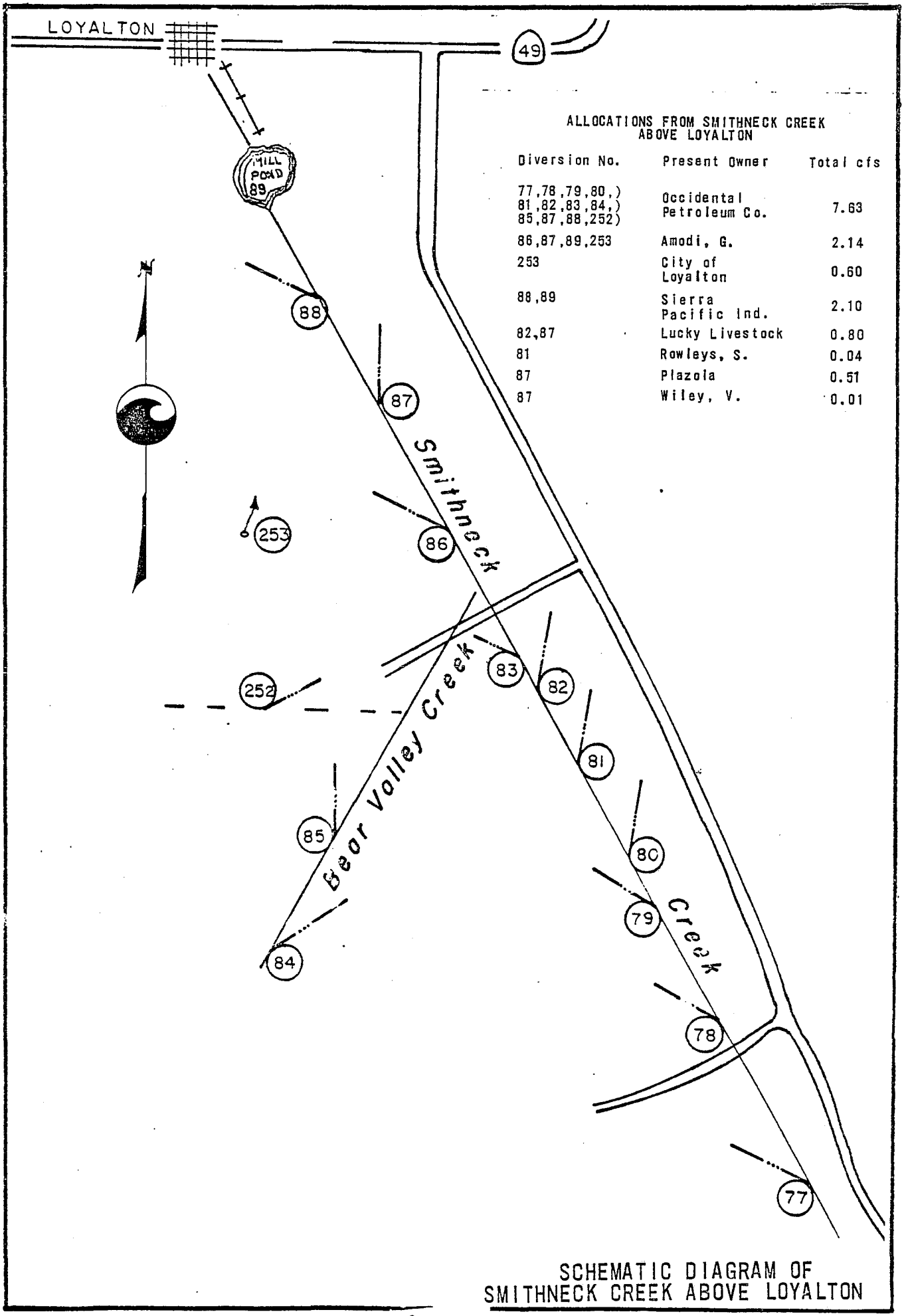


ALLOCATIONS FROM LITTLE LAST CHANCE CREEK
BELOW HIGHWAY 70

Diversion No.	Present Owner	Total cfs
31*,32*,57*,) 58*,59,60)	Ramelli, T.	3.30
57,58,59,60	Ayoob, G.	4.05
43,44,45,67, 68,69,72,79	Roberti, E.	9.14
70	Ramelli, M.	0.55
70	Wiley, V.	0.20
70	Carmicheal, S.	0.10
47,48,49	Overland Inc.	4.45
52,53	Maddalena, L.	1.20
54,55	Noble, P.	0.45
67,72	Lucky Livestock	1.68
67,108	Hage, J.	0.20

* See Fig. 12a for location of diversions 33-42, 46,50,51,61-68,71,73,98 (Occidental Petroleum)

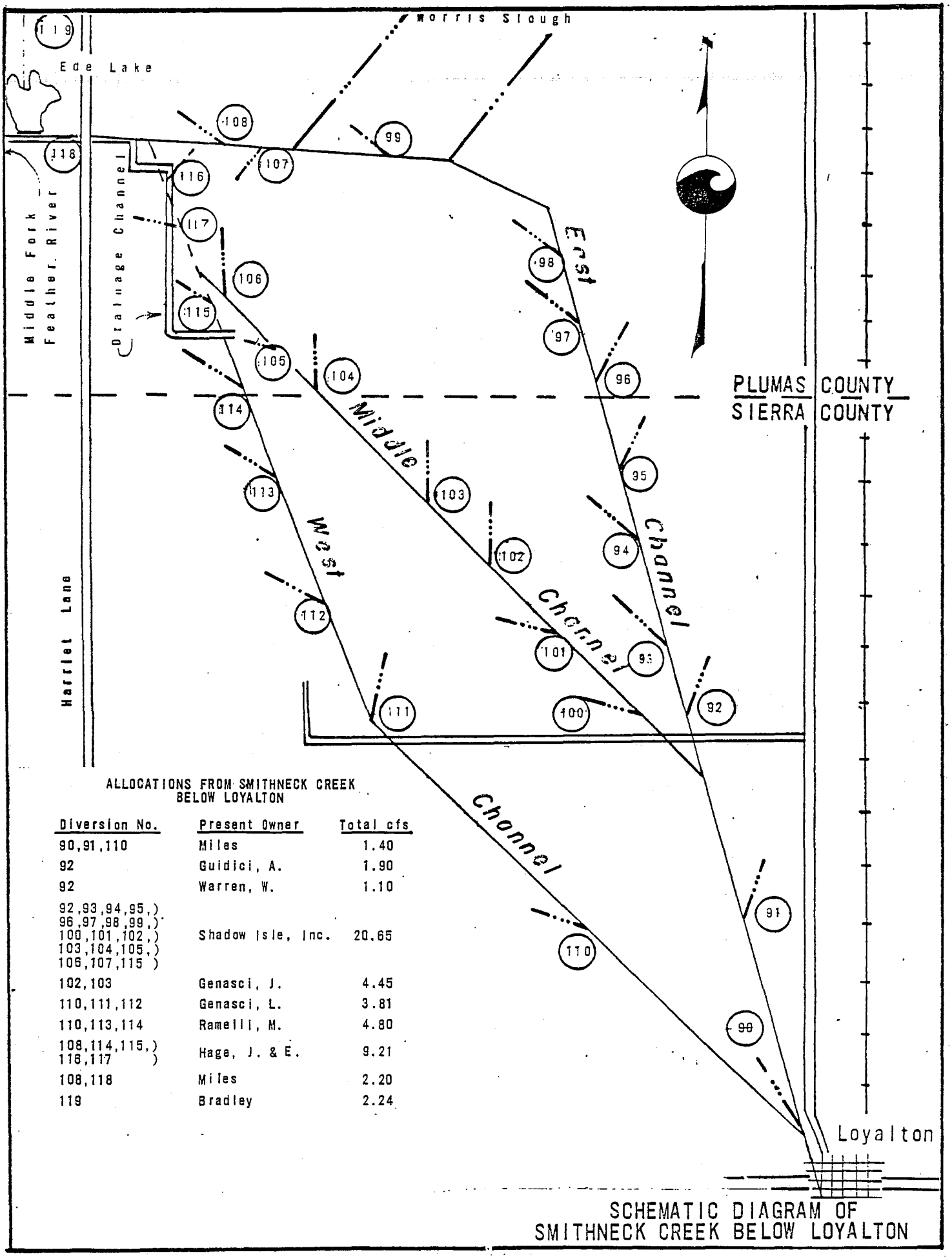
SCHEMATIC DIAGRAM OF
LITTLE LAST CHANCE CREEK
BELOW HIGHWAY 70



ALLOCATIONS FROM SMITHNECK CREEK ABOVE LOYALTON

Diversion No.	Present Owner	Total cfs
77,78,79,80,) 81,82,83,84,) 85,87,88,252)	Occidental Petroleum Co.	7.63
86,87,89,253	Amodi, G.	2.14
253	City of Loyalton	0.60
88,89	Sierra Pacific Ind.	2.10
82,87	Lucky Livestock	0.80
81	Rowleys, S.	0.04
87	Plazola	0.51
87	Wiley, V.	0.01

SCHEMATIC DIAGRAM OF SMITHNECK CREEK ABOVE LOYALTON



ALLOCATIONS FROM SMITHNECK CREEK BELOW LOYALTON

Diversion No.	Present Owner	Total cfs
90,91,110	Miles	1.40
92	Guidici, A.	1.90
92	Warren, W.	1.10
92,93,94,95,) 96,97,98,99,) 100,101,102,) 103,104,105,) 106,107,115)	Shadow Isle, Inc.	20.65
102,103	Genasci, J.	4.45
110,111,112	Genasci, L.	3.81
110,113,114	Ramelli, M.	4.80
108,114,115,) 116,117)	Hage, J. & E.	9.21
108,118	Miles	2.20
119	Bradley	2.24

SCHEMATIC DIAGRAM OF SMITHNECK CREEK BELOW LOYALTON

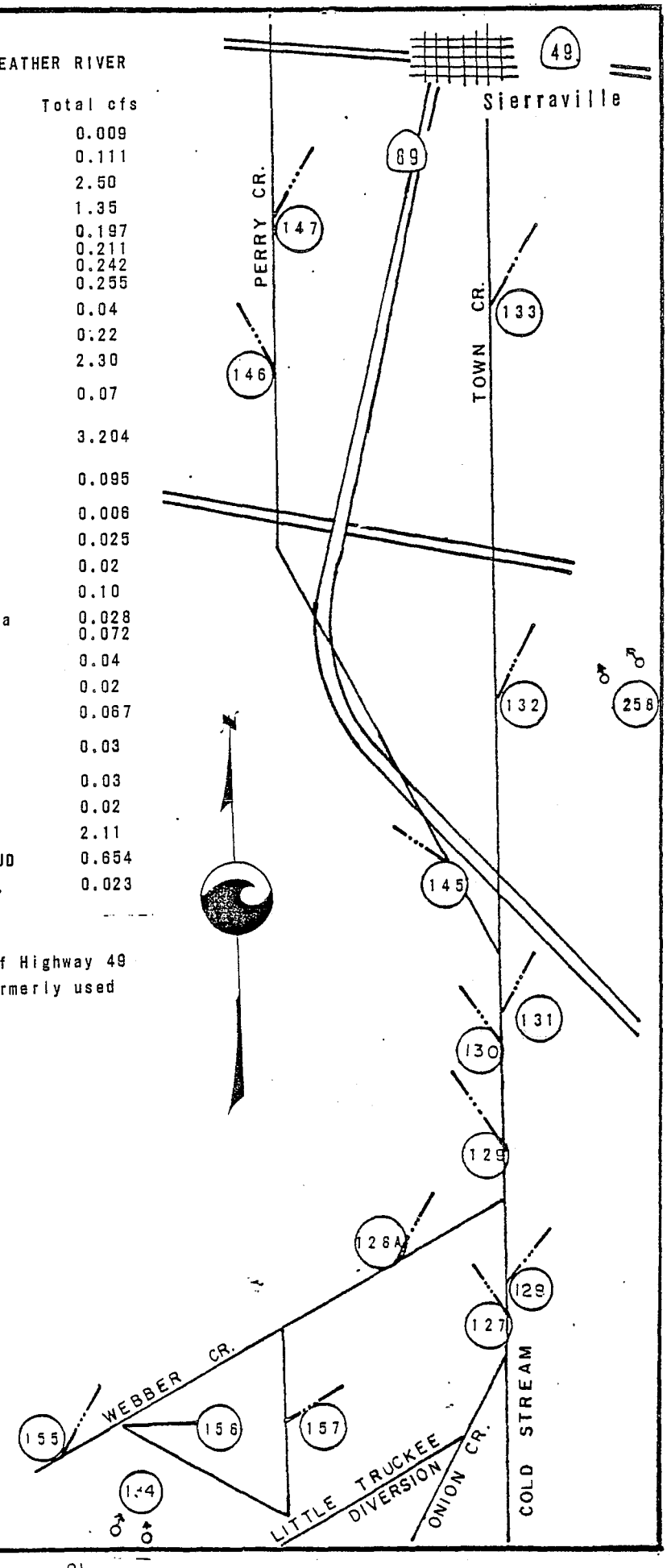
ALLOCATIONS FROM MIDDLE FORK FEATHER RIVER SOUTH OF HIGHWAY 49

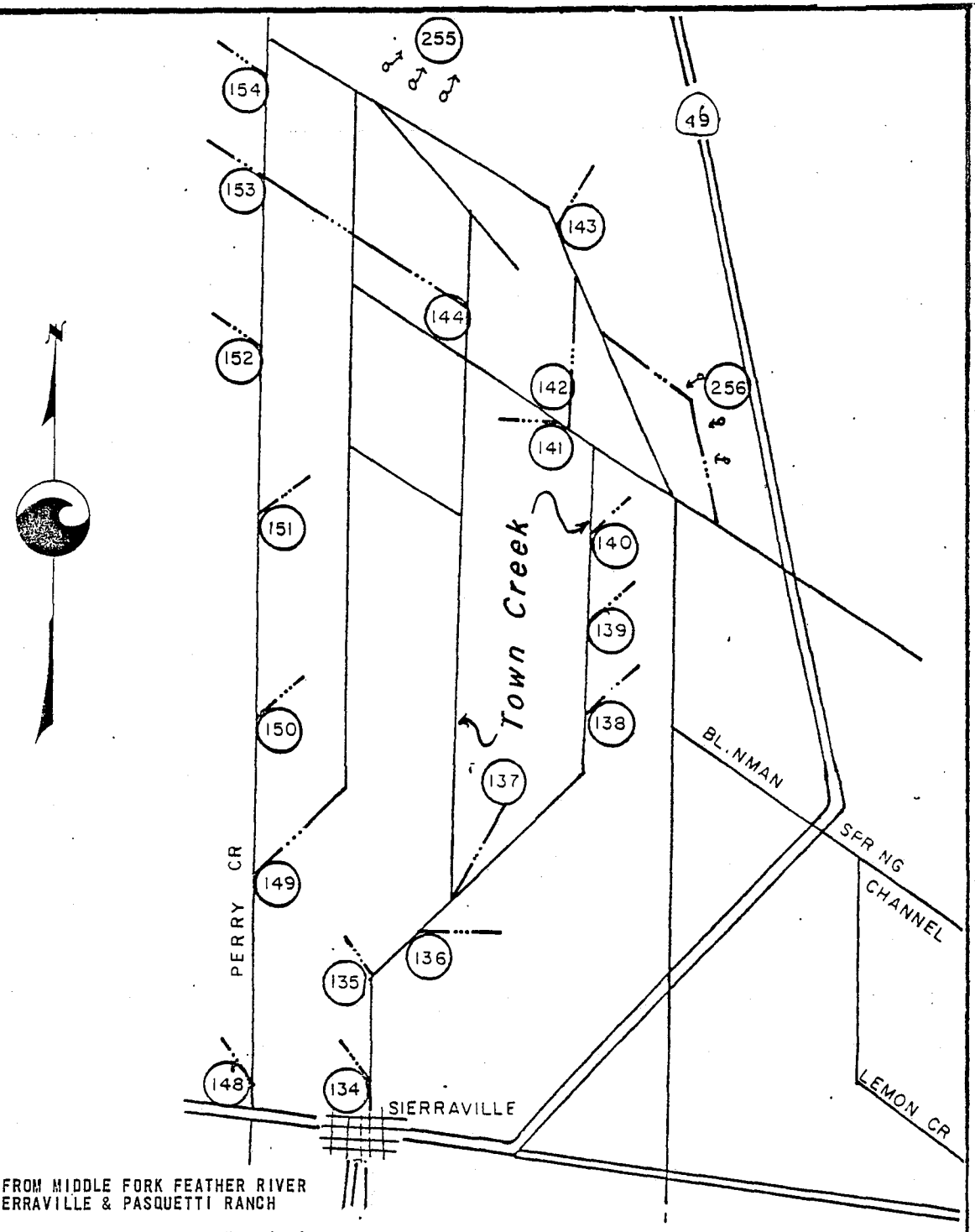
Diversion No.	Present Owner	Total cfs
127	Morgan	0.009
127	Monico	0.111
155	Amodei, J.	2.50
133, 156, 157	McKinney	1.35
128, 128A	Shrigley, M.	0.197
128, 128A	Grimm, W.	0.211
128, 128A	Donnell, H.	0.242
128, 128A	McCafferty, L.	0.255
133, 134	Johnson, L.	0.04
134*	Johnson, S.	0.22
129*	Maddalena, G.	2.30
131	Pitchfork Cattle Co.	0.07
131, 132, 145, 258	Willis, R&P.	3.204
128, 128A	S.F. Day Girl Scout Council	0.095
130	LaCosta, P.	0.006
130	Dellera, C.	0.025
145	Vaum, R&N.	0.02
145	Wright, I.	0.10
145	McCaffrey, Lola	0.028
145	McCaffrey, J.	0.072
145	Scudder, N.	0.04
133	Goodrich, C.	0.02
134	Mello, E.	0.067
134	Tahoe Truckee Lumber Co.	0.03
134	Griffen, T.	0.03
134	Rosocoe, P.	0.02
129, 133**	Webber, G.	2.11
R. R. Springs	Sierraville PUD	0.654
134	Lombardi, E&C.	0.023

* Both sides of Highway 49

** Other allocations north of Highway 49

Rights under Div. 134, formerly used in Sierraville.





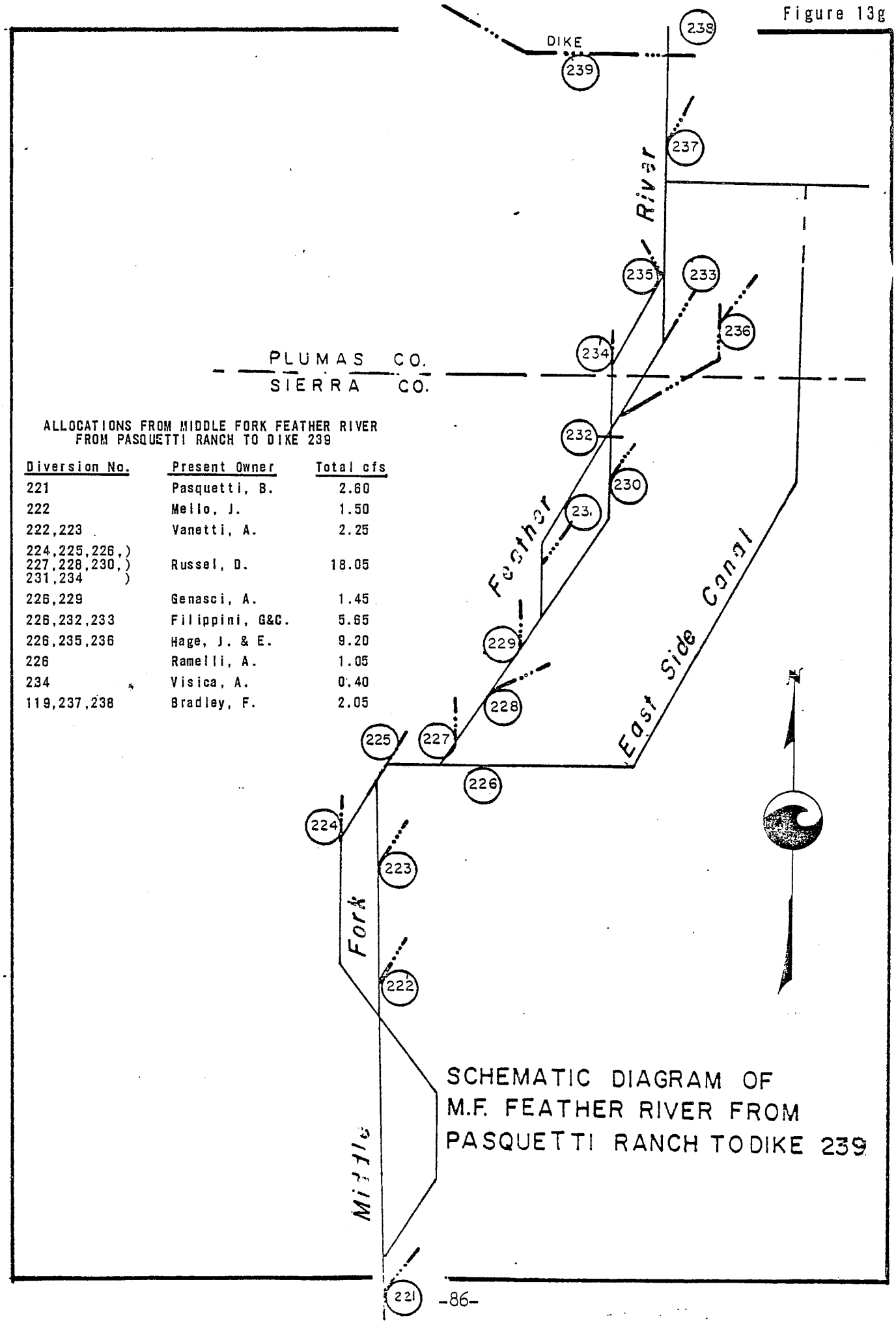
ALLOCATIONS FROM MIDDLE FORK FEATHER RIVER
BETWEEN SIERRAVILLE & PASQUETTI RANCH

Diversion No.	Present Owner	Total cfs
134	Hannon, P.	0.015
134	Snozzi, A.	0.02
135	Carmichael, S.	0.55
137,141,146*,) 147*,149,152)	Webber, G.	13.00
136,137,138,) 139,147*)	Bony, M.	6.85
148	Wilson Bros.	2.00
148,149,150,) 151)	Small, F.	4.90
140,256	Alpers, F.	3.20
142,143,255	Torri, K.	4.00
144,153,154	Euer, R&J.	2.00

* See Fig. 12e

SCHEMATIC DIAGRAM OF
MIDDLE FORK FEATHER RIVER
BETWEEN
SIERRAVILLE AND PASQUETTI RANCH

Figure 13g

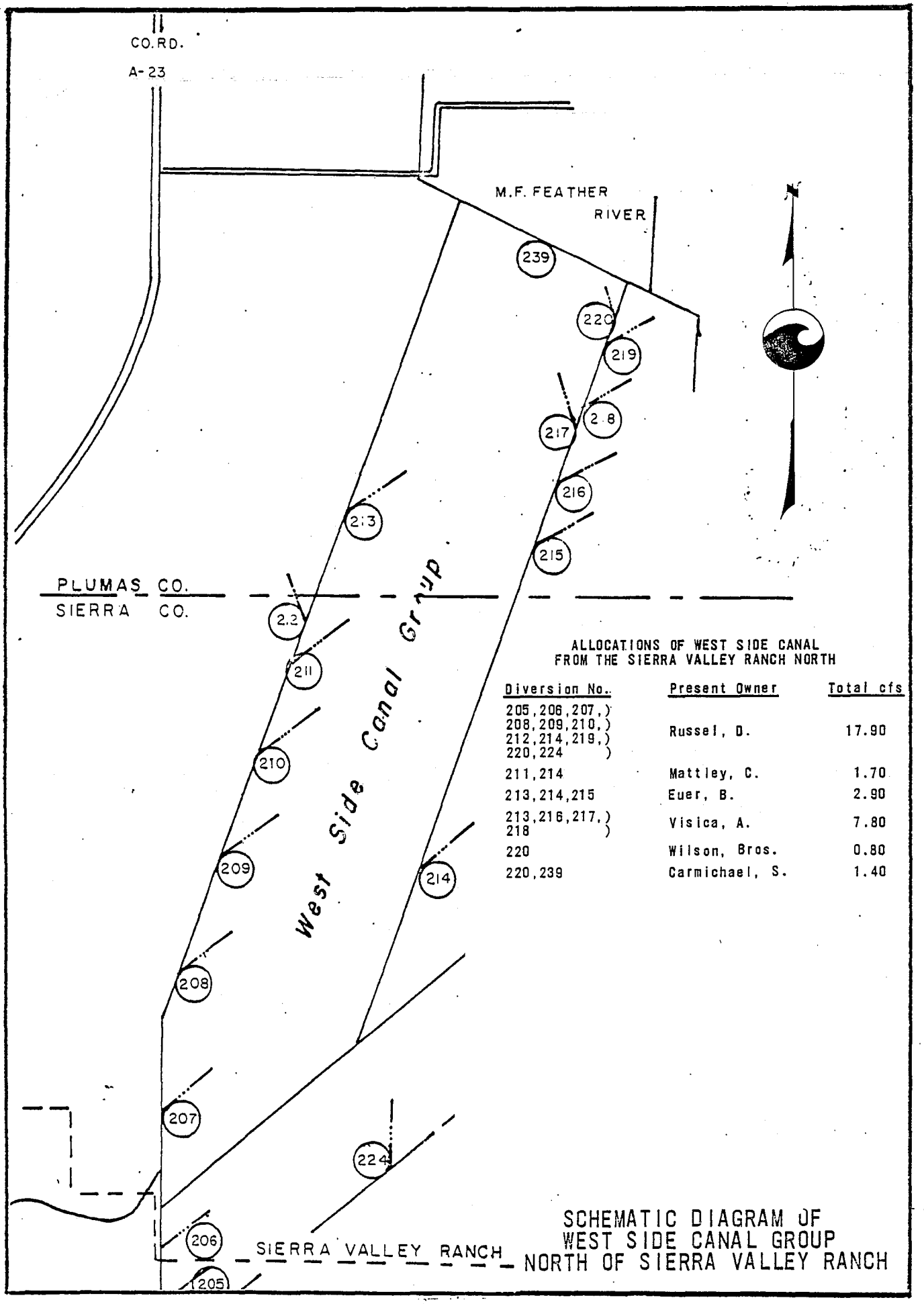


ALLOCATIONS FROM MIDDLE FORK FEATHER RIVER
FROM PASQUETTI RANCH TO DIKE 239

Diversion No.	Present Owner	Total cfs
221	Pasquetti, B.	2.60
222	Mello, J.	1.50
222,223	Vanetti, A.	2.25
224,225,226,) 227,228,230,) 231,234)	Russel, D.	18.05
226,229	Genasci, A.	1.45
226,232,233	Filippini, G&C.	5.65
226,235,236	Hage, J. & E.	9.20
226	Ramelli, A.	1.05
234	Visica, A.	0.40
119,237,238	Bradley, F.	2.05

SCHEMATIC DIAGRAM OF
M.F. FEATHER RIVER FROM
PASQUETTI RANCH TODIKE 239

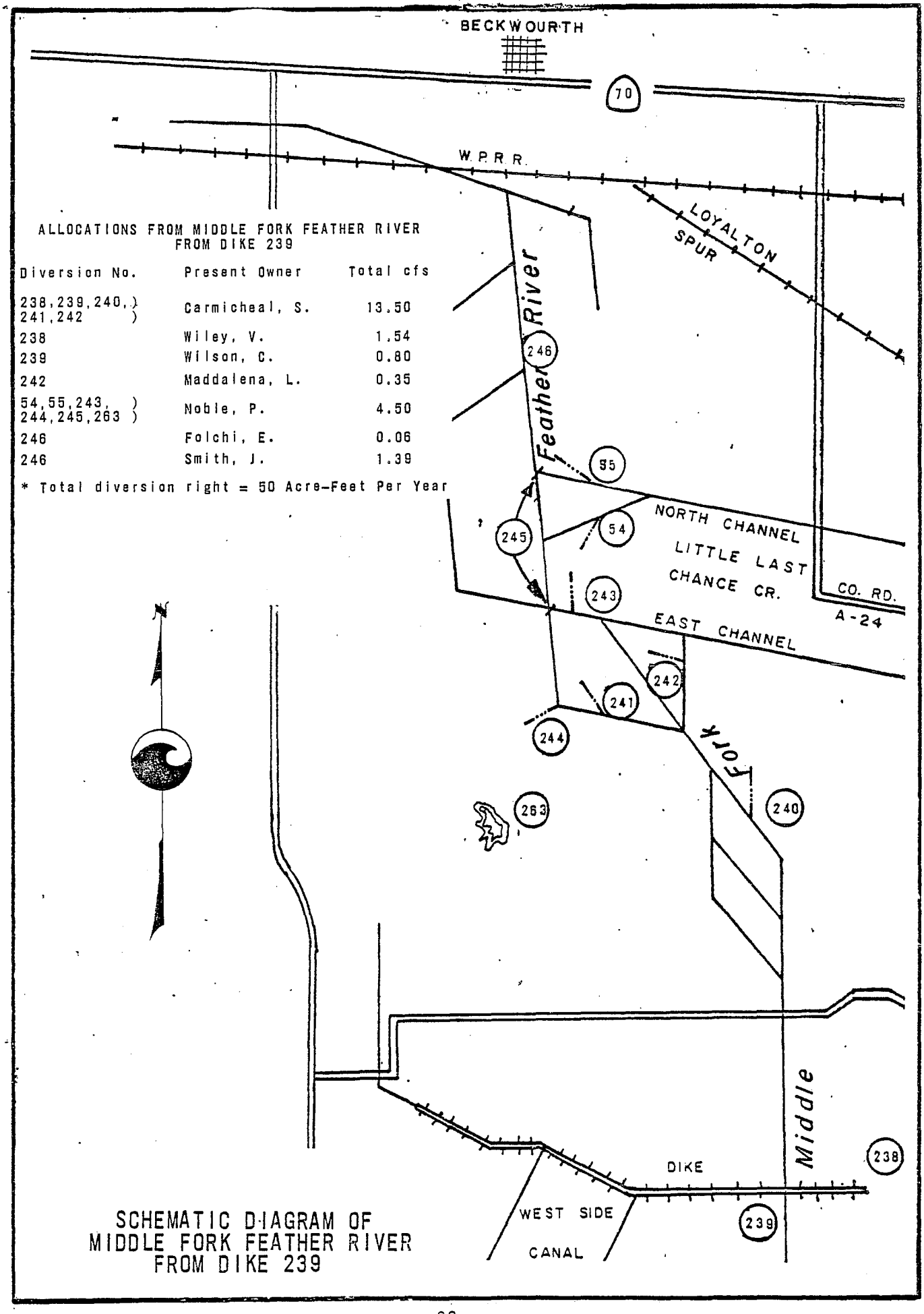
Figure 13h



ALLOCATIONS OF WEST SIDE CANAL
FROM THE SIERRA VALLEY RANCH NORTH

Diversion No.	Present Owner	Total cfs
205,206,207,) 208,209,210,) 212,214,219,) 220,224)	Russel, D.	17.90
211,214	Mattley, C.	1.70
213,214,215	Euer, B.	2.90
213,216,217,) 218)	Visica, A.	7.80
220	Wilson, Bros.	0.80
220,239	Carmichael, S.	1.40

SCHEMATIC DIAGRAM OF
WEST SIDE CANAL GROUP



ALLOCATIONS FROM MIDDLE FORK FEATHER RIVER FROM DIKE 239

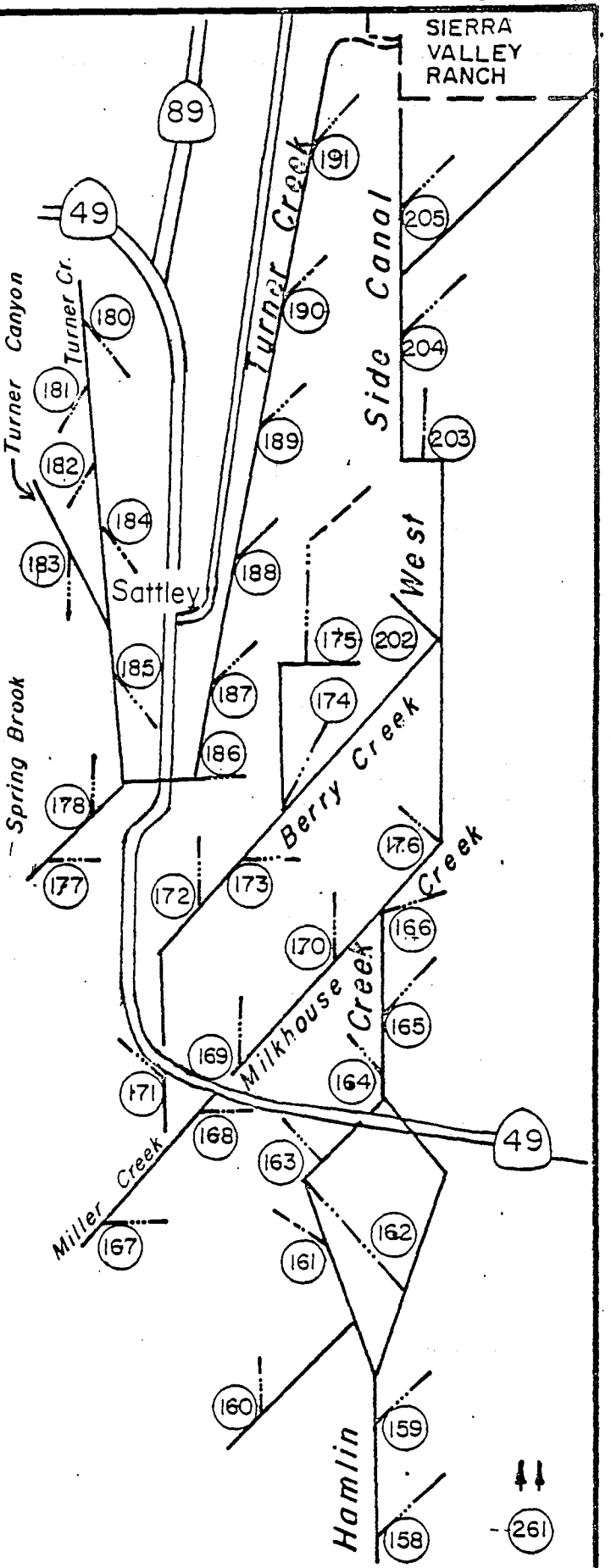
Diversion No.	Present Owner	Total cfs
238,239,240,) 241,242)	Carmicheal, S.	13.50
238	Wiley, V.	1.54
239	Wilson, C.	0.80
242	Maddalena, L.	0.35
54,55,243,) 244,245,263)	Noble, P.	4.50
246	Folchi, E.	0.06
246	Smith, J.	1.39

* Total diversion right = 50 Acre-Feet Per Year

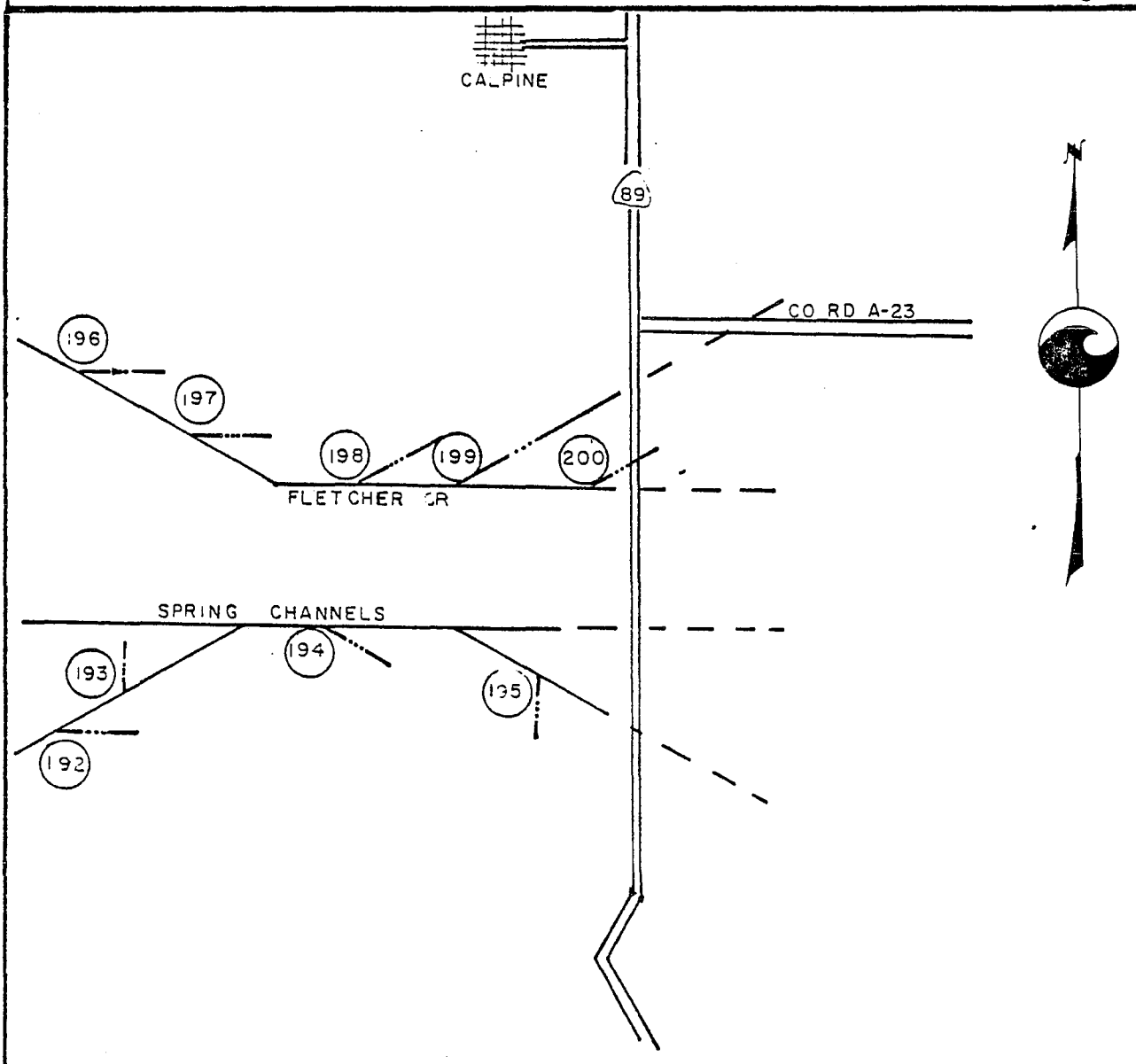
SCHEMATIC DIAGRAM OF MIDDLE FORK FEATHER RIVER FROM DIKE 239

ALLOCATIONS FROM WEST SIDE CANAL GROUP
SOUTH OF SIERRA VALLEY RANCH

Diversion No.	Present Owner	Total cfs
158,159,161,) 162,261)	Maddalena, L.	6.13
160,161,163,) 164,167)	Strang, A&E.	8.55
165,167,168,) 169,170,171,) 173,174,177)	Martinetti, E.	6.33
165,166	Webber, G.	2.60
172,177,178,) 184,185)	Cavitt, J.	4.25
174,202,175	Tong, J.	2.60
175,184,186,) 187)	Church, G.	5.60
180	Turner, J.	0.02
175,181,182,) 183,184,185,) 187,189,190,) 202)	Turner, F.	10.25
176	Wilson Bros.	1.50
180,188	Dargie, T.	2.90
189	Berutti, J.	2.50
189,191,202,) 204,205)	Van Vleck, G.	6.05
176,203	Euer, R&J.	1.50
176	Pasguetti, B.	2.40



SCHEMATIC DIAGRAM OF
WEST SIDE CANAL GROUP
SOUTH OF SIERRA VALLEY RANCH



ALLOCATIONS FROM FLETCHER CREEK
AND SPRING CHANNELS

Diversion No.	Present Owner	Total cfs
196	Sierra Co. Water District	0.56
177,178,192,) 193,194)	Borelli, A.	1.744
192	Scott, F.	0.05
192,193,194	Jinnette, F&W.	0.046
195,199,200	Paulson & Cadenhead	1.428
199	Lukens & Coppla	0.302
199,200	Jaquess, E.	1.32

SCHEMATIC DIAGRAM
FLETCHER CREEK
AND
SPRING CHANNELS

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 17

LITTLE TRUCKEE DITCH AT HEAD

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1							1.161	41.0	0.991	35.0	0.099	3.5	0.042	1.5	1
2							1.161	41.0	0.906	32.0	0.093	3.3	0.042	1.5	2
3							1.218	43.0	0.850	30.0	0.088	3.1	0.042	1.5	3
4					0.708	25.0*	1.274	45.0	0.793	28.0	0.074	2.6	0.037	1.3	4
5					1.218	43.0	1.303	46.0	0.736	26.0	0.068	2.4	0.034	1.2	5
6					1.161	41.0	1.586	56.0	0.651	23.0	0.062	2.2	0.025	0.9	6
7					0.991	35.0	1.643	58.0	0.595	21.0	0.068	2.4	0.020	0.7	7
8					0.878	31.0	1.416	50.0	0.510	18.0	0.057	2.0	0.017	0.6	8
9					0.793	28.0	1.331	47.0	0.481	17.0	0.074	2.6	0.014	0.5	9
10					0.793	28.0	1.359	48.0	0.453	16.0	0.074	2.6	0.014	0.5	10
11					0.821	29.0	1.359	48.0	0.425	15.0	0.068	2.4	0.020	0.7	11
12					0.935	33.0	1.416	50.0	0.368	13.0	0.068	2.4	0.023	0.8	12
13					0.708	25.0	1.359	48.0	0.368	13.0	0.062	2.2	0.023	0.8	13
14					0.425	15.0	1.218	43.0	0.340	12.0	0.048	1.7	0.025	0.9	14
15					0.481	17.0	1.558	55.0	0.283	10.0	0.042	1.5	0.028	1.0	15
16					0.481	17.0	1.643	58.0	0.283	10.0	0.037	1.3	0.025	0.9	16
17					0.510	18.0	1.671	59.0	0.283	10.0	0.025	0.9	0.025	0.9	17
18					0.566	20.0	1.473	52.0	0.244	8.6	0.023	0.8	0.023	0.8	18
19					1.643	58.0	1.274	45.0	0.232	8.2	0.017	0.6	0.020	0.7	19
20					1.614	57.0	1.473	52.0	0.232	8.2	0.020	0.7	0.014	0.5	20
21					1.699	60.0	1.699	60.0	0.425	15.0	0.037	1.3	0.014	0.5	21
22					1.671	59.0	1.699	60.0	0.425	15.0	0.037	1.3	0.011	0.4	22
23					1.671	59.0	1.699	60.0	0.283	10.0	0.034	1.2	0.017	0.6	23
24					1.671	59.0	1.699	60.0	0.261	9.2	0.025	0.9	0.020	0.7	24
25					1.671	59.0	1.671	59.0	0.215	7.6	0.025	0.9	0.017	0.6	25
26					1.671	59.0	1.614	57.0	0.184	6.5	0.025	0.9	0.014	0.5	26
27					1.671	59.0	1.501	53.0	0.167	5.9	0.023	0.8	0.014	0.5	27
28					1.671	59.0	1.359	48.0	0.167	5.9	0.023	0.8	0.014	0.5	28
29					1.473	52.0	1.218	43.0	0.161	5.7	0.042	1.5	0.014	0.5	29
30					1.274	45.0	1.076	38.0	0.130	4.6	0.037	1.3	0.017	0.6	30
31					1.189	42.0			0.105	3.7	0.042	1.5			31
MEAN					1.034	36.5	1.438	50.8	0.405	14.3	0.049	1.7	0.022	0.8	MEAN
DAM^3					2768.		3724.		1083.		131.		58.		DAM^3
AC-FT						2244.		3019.		878.		106.		47.	AC-FT

* Beginning of record

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 18

MIDDLE FORK FEATHER RIVER NEAR PORTOLA

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1	4.050	143.0	4.418	156.0	0.793	28.0	0.963	34.0	0.425	15.0	2.719	96.0	4.503	159.0	1
2	4.560	161.0	3.512	124.0	0.623	22.0	0.935	33.0	0.453	16.0	2.719	96.0	3.908	138.0	2
3	4.701	166.0	3.059	108.0	0.680	24.0	0.963	34.0	0.396	14.0	2.719	96.0	0.283	10.0	3
4	4.814	170.0	2.804	99.0	0.935	33.0	0.991	35.0	0.396	14.0	2.719	96.0	0.122	4.3	4
5	5.296	187.0	2.605	92.0	1.274	45.0	1.020	36.0	0.396	14.0	2.719	96.0	0.125	4.4	5
6	6.514	230.0	2.520	89.0	1.586	56.0	0.991	35.0	0.340	12.0	2.719	96.0	0.178	6.3	6
7	8.496	300.0	2.464	87.0	2.181	77.0	0.935	33.0	0.368	13.0	2.719	96.0	0.161	5.7	7
8	10.648	376.0	2.520	89.0	2.719	96.0	0.850	30.0	0.368	13.0	2.719	96.0	0.173	6.1	8
9	11.611	410.0	2.520	89.0	3.059	108.0	0.821	29.0	0.368	13.0	2.719	96.0	0.181	6.4	9
10	10.648	376.0	2.520	89.0	4.106	145.0	0.765	27.0	0.340	12.0	2.719	96.0	0.184	6.5	10
11	9.346	330.0	2.464	87.0	4.503	159.0	0.708	25.0	0.340	12.0	2.662	94.0	0.198	7.0	11
12	7.958	281.0	2.464	87.0	4.106	145.0	0.651	23.0	0.340	12.0	2.662	94.0	0.184	6.5	12
13	7.165	253.0	2.266	80.0	3.455	122.0	0.595	21.0	0.340	12.0	2.662	94.0	0.178	6.3	13
14	6.938	245.0	2.011	71.0	2.860	101.0	0.566	20.0	0.396	14.0	2.662	94.0	0.176	6.2	14
15	6.514	230.0	2.011	71.0	2.520	89.0	0.566	20.0	0.396	14.0	2.662	94.0	0.159	5.6	15
16	6.768	239.0	2.011	71.0	2.152	76.0	0.510	18.0	0.396	14.0	2.662	94.0	0.164	5.8	16
17	6.514	230.0	2.011	71.0	1.756	62.0	0.510	18.0	0.396	14.0	2.662	94.0	0.153	5.4	17
18	6.202	219.0	2.067	73.0	1.614	57.0	0.736	26.0	0.396	14.0	2.662	94.0	0.156	5.5	18
19	5.466	193.0	2.237	79.0	1.501	53.0	0.736	26.0	1.161	41.0	2.662	94.0	0.164	5.8	19
20	4.758	168.0	2.237	79.0	1.444	51.0	0.566	20.0	2.747	97.0	2.662	94.0	0.150	5.3	20
21	4.361	154.0	1.728	61.0	1.274	45.0	0.963	34.0	2.860	101.0	2.662	94.0	0.159	5.6	21
22	3.908	138.0	1.218	43.0	1.189	42.0	0.878	31.0	2.974	105.0	2.662	94.0	0.161	5.7	22
23	3.512	124.0	1.614	57.0	1.161	41.0	0.595	21.0	2.860	101.0	2.662	94.0	0.167	5.9	23
24	3.172	112.0	1.756	62.0	1.133	40.0	0.510	18.0	2.804	99.0	3.115	110.0	0.164	5.8	24
25	2.974	105.0	1.982	70.0	1.076	38.0	0.453	16.0	2.804	99.0	4.361	154.0	0.167	5.9	25
26	2.804	99.0	2.322	82.0	1.133	40.0	0.425	15.0	2.804	99.0	4.361	154.0	0.170	6.0	26
27	2.974	105.0	2.464	87.0	1.161	41.0	0.396	14.0	2.804	99.0	4.361	154.0	0.190	6.7	27
28	3.795	134.0	2.379	84.0	1.161	41.0	0.396	14.0	2.804	99.0	4.418	156.0	0.193	6.8	28
29	5.381	190.0	2.011	71.0	1.104	39.0	0.396	14.0	2.804	99.0	4.503	159.0	0.181	6.4	29
30	6.514	230.0	1.756	62.0	1.104	39.0	0.396	14.0	2.804	99.0	4.503	159.0	0.167	5.9	30
31	5.749	203.0			1.048	37.0			2.747	97.0	4.503	159.0			31
MEAN	5.939	209.7	2.332	82.3	1.820	64.3	0.693	24.5	1.349	47.6	3.094	109.3	0.441	15.6	MEAN
DAM^3	15896.		6040.		4871.		1795.		3612.		8282.		1141.		DAM^3
AC-FT		12887.		4896.		3949.		1455.		2928.		6714.		925.	AC-FT

NORTH FORK COTTONWOOD CREEK SERVICE AREA

The North Fork Cottonwood Creek service area is situated in Shasta County near the town of Ono west of Redding. Figure 14, page 94, shows the North Fork Cottonwood Creek stream system including the diversions and roads.

The source of water supply for this service area is the North Fork of Cottonwood Creek and its two major tributaries, Moon Creek and Jerusalem Creek. The North Fork of Cottonwood Creek flows through the service area in a southeasterly direction to its confluence with the other two major forks of Cottonwood Creek and then to the Sacramento River east of the town of Cottonwood. The service area consists of sparsely scattered parcels separated by about the 300-m (1,000-ft) elevation.

Basis of Service

The water rights of this creek system were determined by court reference and set forth in Decree No. 5479, Shasta County Superior Court, dated June 9, 1920. The North Fork Cottonwood Creek watermaster service area was created September 11, 1929; however, service was provided intermittently in accordance with the decree since 1924. All water rights are of equal priority.

Water Supply

Snowmelt contributes to the flow in the North Fork Cottonwood Creek system during the early part of the irrigation season. However, perennial springs provide the major source of supply during the summer and fall months. The flow is normally sufficient to supply all demands. In dry years, however, the available supply may be as low as 20 to 40 percent of the decreed allotments.

A record of the daily mean discharge of North Fork Cottonwood Creek near Igo is presented in Table 19, page 95. This gaging station is downstream from most diversion points on the creek, but gives a general indication of the water supply.

Method of Distribution

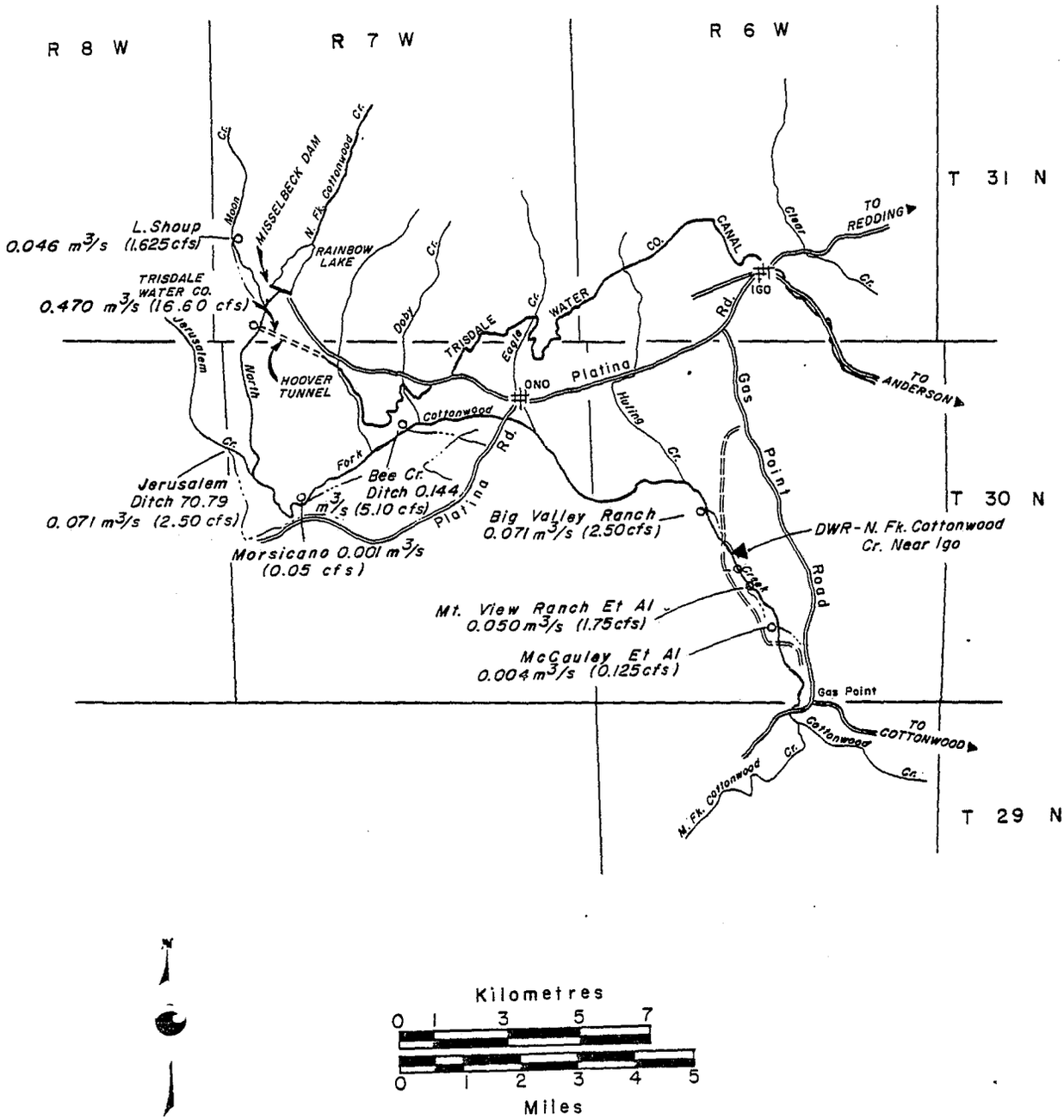
The general practice throughout the area is to irrigate by wild flooding. One water user, however, pumps directly from the creek using a sprinkler system to irrigate his crops. Pumping was necessary at this diversion point because the irrigated land was considerably higher in elevation than the creek channel.

1979 Distribution

Seth Barrett, Water Resources Technician II, was the watermaster for the North Fork Cottonwood Creek service area beginning May and continuing through September 30.

The water supply was good for the entire season, with some surplus passing the Gas Point Bridge below all diverters in the service area.

Figure 14



DIVERSIONS FROM NORTH FORK COTTONWOOD CREEK WATERMASTER SERVICE AREA

NORTH FORK COTTONWOOD CREEK WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 19

COTTONWOOD CREEK NORTH FORK NEAR IGO

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			8.666	306.0	5.069	179.0	1.869	66.0	0.481	17.0	0.130	4.6	0.510	18.0	1
2			8.100	286.0	4.588	162.0	1.756	62.0	0.396	14.0	0.113	4.0	0.595	21.0	2
3			7.788	275.0	4.361	154.0	1.699	60.0	0.396	14.0	0.113	4.0	0.538	19.0	3
4			7.646	270.0	4.248	150.0	1.586	56.0	0.396	14.0	0.108	3.8	0.481	17.0	4
5			7.505	265.0	5.154	182.0	1.416	50.0	0.425	15.0	0.130	4.6	0.425	15.0	5
6			7.420	262.0	4.871	172.0	1.388	49.0	0.368	13.0	0.130	4.6	0.396	14.0	6
7			6.995	247.0	5.069	179.0	1.388	49.0	0.340	12.0	0.125	4.4	0.283	10.0	7
8			6.684	236.0	5.126	181.0	1.388	49.0	0.368	13.0	0.125	4.4	0.266	9.4	8
9			6.202	219.0	4.871	172.0	1.359	48.0	0.340	12.0	0.105	3.7	0.249	8.8	9
10			5.607	198.0	4.616	163.0	1.331	47.0	0.453	16.0	0.091	3.2	0.221	7.8	10
11			4.899	173.0	4.475	158.0	1.303	46.0	0.396	14.0	0.088	3.1	0.190	6.7	11
12			4.644	164.0	4.333	153.0	1.274	45.0	0.340	12.0	0.085	3.0	0.153	5.4	12
13			4.531	160.0	4.191	148.0	1.189	42.0	0.283	10.0	0.085	3.0	0.156	5.5	13
14			4.418	156.0	4.021	142.0	1.020	36.0	0.246	8.7	0.136	4.8	0.159	5.6	14
15			4.248	150.0	3.936	139.0	1.048	37.0	0.164	5.8	0.156	5.5	0.164	5.8	15
16			4.361	154.0	3.342	118.0	1.048	37.0	0.235	8.3	0.130	4.6	0.125	4.4	16
17			4.135	146.0	3.257	115.0	1.104	39.0	0.252	8.9	0.119	4.2	0.125	4.4	17
18			3.965	140.0	3.115	110.0	1.133	40.0	0.187	6.6	0.116	4.1	0.110	3.9	18
19			3.823	135.0	2.889	102.0	1.076	38.0	0.091	3.2	0.091	3.2	0.113	4.0	19
20			3.597	127.0	2.775	98.0	1.020	36.0	0.091	3.2	0.125	4.4	0.091	3.2	20
21			3.285	116.0	2.690	95.0	0.991	35.0	0.096	3.4	0.193	6.8	0.076	2.7	21
22			3.512	124.0	2.577	91.0	0.963	34.0	0.110	3.9	0.227	8.0	0.059	2.1	22
23			7.703	272.0	2.520	89.0	0.906	32.0	0.130	4.6	0.198	7.0	0.051	1.8	23
24			7.476	264.0	2.407	85.0	0.878	31.0	0.125	4.4	0.198	7.0	0.048	1.7	24
25			5.069	179.0	2.266	80.0	0.850	30.0	0.091	3.2	0.142	5.0	0.068	2.4	25
26			5.806	205.0	2.181	77.0	0.850	30.0	0.093	3.3	0.232	8.2	0.082	2.9	26
27			7.108	251.0	2.124	75.0	0.850	30.0	0.088	3.1	0.244	8.6	0.076	2.7	27
28			6.004	212.0	2.096	74.0	0.821	29.0	0.085	3.0	0.396	14.0	0.074	2.6	28
29			5.466	193.0	2.039	72.0	0.793	28.0	0.085	3.0	0.680	24.0	0.068	2.4	29
30			5.126	181.0	2.011	71.0	0.793	28.0	0.082	2.9	0.708	25.0	0.062	2.2	30
31					1.982	70.0			0.108	3.8	0.595	21.0			31
MEAN			5.726	202.2	3.523	124.4	1.170	41.3	0.237	8.4	0.197	7.0	0.201	7.1	MEAN
DAM^3			14832.		9429.		3030.		634.		528.		519.		DAM^3
AC-FT				12025.		7644.		2456.		514.		428.		421.	AC-FT

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

The North Fork Pit River service area lies along the west slopes of the Warner Mountains in northeastern Modoc County and extends southward from the Oregon border just 73 km (45 mi) to just south of Alturas.

Eight small independent streams draining the west slope of the Warner Mountains and generally following a westerly direction comprise the major source of water supply. Three of these streams (New Pine, Cottonwood, and Davis Creeks) are tributary to Goose Lake. The other five are tributary to the North Fork Pit River. From north to south, these are: Linville, Franklin, Joseph, Thoms, and Parker Creeks.

The North Fork Pit River flows in a southerly direction from the south rim of Goose Lake Basin to its confluence with the South Fork Pit River immediately below Alturas. The basins of Goose Lake and the North Fork Pit River may be considered as completely separate since the lake has not spilled into the river for nearly 100 years.

The place of use in the northern half of the area lies in a relatively long, narrow, sloping strip extending between the east shore of Goose Lake and the foothills of the Warner Mountains. The places of use in the southern half of the area, which are supplied from the North Fork Pit River and its tributaries, are primarily in the narrow valleys bordering the streams. The elevation of the places of use range from about 1 325 m (4,350 ft) just below Alturas to about 1 585 m (5,200 ft) at the upper portions on some of the creeks.

Maps of the North Fork Pit River watermaster service area and of the separate stream systems within the area are presented as Figures 15 through 15i, pages 107 through 125.

Basis of Service

Table 20, page 98, briefly outlines the five decrees covering the area and presents data relative to the establishment of watermaster service and water rights.

Water Supply

The water supply is derived primarily from snowmelt for all streams in the North Fork Pit River service area except Linville Creek, which, having a relatively small drainage area, is almost entirely spring fed. After mid-June, the rest of the streams also depend on springs, but diminish rapidly until mid-July, after which the flow remains fairly constant. There are several small reservoirs in the area, but they are used essentially as regulatory storage.

Method of Distribution

Distribution is accomplished by diversion structures in the main channels diverting into ditches which convey the water to its place of use. Wild flooding from small feeder ditches is the common method of application. There is, however, increasing use of sprinkler systems, some idrectly from ditches with supplemental ground water being added as the surface flow diminishes. Subirrigation by the use of large flashboard dams to raise the water level in the channel is practices along the North Fork Pit River between Parker Creek and Alturas.

1979 Distribution

Watermaster service in the North Fork Pit River service area began April 1 and continued until September 30. Charles Hodge, Water Resources Technician II, was watermaster during this period.

TABLE 20

DECREES AND RELATED DATA - NORTH FORK PIT RIVER SERVICE AREA

Stream	Modoc County Superior Court Decree No.	Date	Type[a]	Service Area Created	No. of Water Right Owners	Total m^3/s	Total ft^3/s	Remarks
New Pine Creek	2821	6-14-32	CR	6-22-32	21	0.628	22.18	Decree does not determine town users rights, but by agreement they may divert from 7 a.m. Monday until 7 a.m. Tuesday, further modified to a continuous flow used in rotation.
Cottonwood Creek	2344	5-03-40	CR	12-13-40	5	0.435	15.35	When water for Diversion No. 3 is insufficient to reach the area of use, it is diverted at Diversion No. 4
Davis Creek	2782	6-30-32	CR	7-13-32	19	1.492	52.70	4 priorities, 4-1 to 9-15. Some rights vary according to flow available. Most 1st & 2nd priorities are year-round. One second priority right is for 0.011 m^3/s (0.40 ft^3/s) export for Roberts Creek.
					2[b]			Appropriative Permit 9825 allows diversion from North Fork Davis Creek and License 10549 to divert from Davis Creek, both for the period from 10-1 to 5-1.
Franklin Creek	3118	9-08-33	CR	9-14-33	4	0.330	11.66	4 priorities. The 1st priority and all 2nd priority rights are year-round, except one, which is equal to all the others 0.041 m^3/s (1.46 ft^3/s), and is for the period 9-15 to 3-31 annually. Third and fourth priorities are for 4-1 to 9-30 each year.
North Fork Pit River	4074	12-14-34	S	12-18-39	10	1.465	51.73	5 priorities, 4-1 to 9-30. Dorris Reservoir water diverted through Parker Creek ditch on Parker Creek. 4th and 5th priorities are special class.
Linville	4074	12-14-39	S	12-18-39	3	0.235	8.30	2 priorities.
Joseph	4074	12-14-39	S	12-18-39	6	0.339	11.98	4 priorities, 4-1 to 9-30. Diversions on south side of stream, with the exception of No. 26, are on net consumptive use basis.
Parker	4074	12-14-39	S	12-18-39	7	0.512	18.07	4 priorities, 4-1 to 9-30. Diversion to Dorris Reservoir shown on North Fork Pit River schedule is made at No. 120, Parker Creek Ditch.
Shields	4074	12-14-39	S	12-18-39	5	0.212	7.50	4 priorities, 4-1 to 9-30.
Thoms	4074	12-14-39	S	12-18-39	9	0.182	6.44	3 priorities, 4-1 to 9-30.
						0.266	9.40	0.142 m^3/s (5.0 ft^3/s) export to Cedar Creek; and 0.125 m^3/s (4.40 ft^3/s) export to Stony Canyon.
Gleason	4074	12-14-39	S	12-18-39	4	0.126	4.45	5 priorities.

a/ S-Statutory, CR-Court Reference.
b/ Appropriative rights, junior to the decreed rights.

The 1979 irrigation season was considered by water users to be a very poor one, due to the below-normal snowpack and the second-lowest amount of precipitation in a 30-year record, July 1978 to July 1979. Also, this has been the eighth successive season that has been below a 50-year average. The early spring water supply was good, but in May the flow diminished rapidly and continued to decrease until September 30.

New Pine Creek. During the 1979 season, there was surplus water to all the users from May 1 through June 25. On July 1 when the schedule changes from proration or correlative rights to the priority system, the flow was sufficient to supply 46 percent of fourth priorities but receded rapidly. On July 30, only second priorities could be filled. At the end of the season, only first rights were satisfied.

Cottonwood Creek. Streamflow was sufficient to meet first through sixth priorities from May 4 to June 1. On June 25, only first priority water was available. There was a steady drop in flow during the rest of the season. On September 30, only 6 percent of first priorities could be filled.

Davis Creek. The water supply in Davis Creek was sufficient to satisfy the requirements of all fourth priority allotments through June 5, when the flow was 1.6 m^3/s (55 ft^3/s). A steady recession of flow continued during the season on September 30. Flow was 0.09 m^3/s (3.2 ft^3/s) or enough to meet the requirements of first priority and 78 percent of second priority allotments.

Linville Creek. The flow in Linville Creek is spring fed with very little fluctuation. Peak daily flow was 1.2 m^3/s (4.4 ft^3/s) and minimum flow was 0.7 m^3/s (2.4 ft^3/s). The flow exceeded first priorities by a small amount only for 12 days in May.

Franklin Creek. The water supply was sufficient to supply all allotments May 13 through May 28. There was a steady recession inflow for the rest of the season. On June 30, flow was available for 16 percent of third rights. On September 15, when the winter schedule began the flow was 0.06 m^3/s (2.0 ft^3/s).

Joseph Creek. Streamflow was in excess of all allotments from April 1 through June 11. Flow dropped rapidly on July 1; only second priorities could be met. On July 22, only first priority water was available. On September 30, flow was 0.04 m^3/s (1.5 ft^3/s) or enough to meet 64 percent of first rights.

Thoms Creek. Runoff from Thoms Creek was adequate to meet all priority allotments until June 5, with excess water available during this period. The flow continued to decrease to the end of the watermaster season on September 30. Flow was only 0.003 m^3/s (0.10 ft^3/s).

North Fork Pit River. Streamflow was in excess of all allotments from April 1 through May 24. Following that date, a steady recession of flow continued until September 30 when flow was 0.03 m^3/s (1.0 ft^3/s).

Parker Creek. A surplus water supply existed in Parker until June 1. First priorities and a decreasing percentage of second priorities were filled the rest of the watermaster season. Flow in September was 0.10 m^3/s (3.6 ft^3/s).

Shields Creek. Streamflow was adequate to fill all allotments until May 8. A steady decrease in flow followed. On July 1, first allotments and 36 percent of seconds were met. On September 30, first allotments and 21 percent of second allotments were available.

Special Occurrences

A new station was installed near the mouth of Parker Creek. A new station was installed on North Fork Pit River near the agriculture inspection station. Several new stations were installed to replace the old wooden ones.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 21

NEW PINE CREEK BELOW SCHROEDER'S

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.167	5.9	0.680	24.0	1.189	42.0	0.481	17.0	0.181	6.4	0.122	4.3	1
2			0.159	5.6	0.708	25.0	1.161	41.0	0.453	16.0	0.173	6.1	0.122	4.3	2
3			0.159	5.6	0.793	28.0	1.161	41.0	0.453	16.0	0.167	5.9	0.122	4.3	3
4			0.167	5.9	0.935	33.0	1.189	42.0	0.425	15.0	0.159	5.6	0.122	4.3	4
5			0.173	6.1	0.963	34.0	1.189	42.0	0.425	15.0	0.153	5.4	0.116	4.1	5
6			0.246	8.7	0.821	29.0	1.218	43.0	0.396	14.0	0.153	5.4	0.116	4.1	6
7			0.246	8.7	0.680	24.0	1.161	41.0	0.396	14.0	0.153	5.4	0.116	4.1	7
8			0.255	9.0	0.566	20.0	1.076	38.0	0.368	13.0	0.144	5.1	0.108	3.8	8
9			0.266	9.4	0.538	19.0	1.020	36.0	0.340	12.0	0.136	4.8	0.108	3.8	9
10			0.246	8.7	0.510	18.0	0.991	35.0	0.340	12.0	0.130	4.6	0.105	3.7	10
11			0.238	8.4	0.538	19.0	0.963	34.0	0.340	12.0	0.130	4.6	0.099	3.5	11
12			0.227	8.0	0.566	20.0	0.991	35.0	0.312	11.0	0.130	4.6	0.099	3.5	12
13			0.238	8.4	0.793	28.0	0.991	35.0	0.275	9.7	0.159	5.6	0.096	3.4	13
14			0.255	9.0	1.048	37.0	0.935	33.0	0.266	9.4	0.144	5.1	0.096	3.4	14
15			0.283	10.0	1.246	44.0	0.821	29.0	0.266	9.4	0.136	4.8	0.096	3.4	15
16			0.368	13.0	1.501	53.0	0.821	29.0	0.266	9.4	0.130	4.6	0.096	3.4	16
17			0.396	14.0	1.671	59.0	0.821	29.0	0.266	9.4	0.130	4.6	0.093	3.3	17
18			0.340	12.0	1.869	66.0	0.793	28.0	0.246	8.7	0.130	4.6	0.091	3.2	18
19			0.312	11.0	1.586	56.0	0.793	28.0	0.227	8.0	0.122	4.3	0.091	3.2	19
20			0.283	10.0	1.529	54.0	0.793	28.0	0.227	8.0	0.130	4.6	0.091	3.2	20
21			0.283	10.0	1.614	57.0	0.765	27.0	0.227	8.0	0.136	4.8	0.091	3.2	21
22			0.312	11.0	1.671	59.0	0.736	26.0	0.227	8.0	0.130	4.6	0.085	3.0	22
23			0.283	10.0	1.699	60.0	0.708	25.0	0.218	7.7	0.122	4.3	0.085	3.0	23
24			0.275	9.7	1.671	59.0	0.680	24.0	0.218	7.7	0.122	4.3	0.085	3.0	24
25			0.275	9.7	1.643	58.0	0.651	23.0	0.210	7.4	0.122	4.3	0.085	3.0	25
26			0.312	11.0	1.643	58.0	0.623	22.0	0.210	7.4	0.122	4.3	0.085	3.0	26
27			0.425	15.0	1.614	57.0	0.623	22.0	0.201	7.1	0.122	4.3	0.085	3.0	27
28			0.481	17.0	1.501	53.0	0.566	20.0	0.201	7.1	0.153	5.4	0.085	3.0	28
29			0.538	19.0	1.359	48.0	0.538	19.0	0.190	6.7	0.122	4.3	0.085	3.0	29
30			0.623	22.0	1.331	47.0	0.481	17.0	0.190	6.7	0.122	4.3	0.085	3.0	30
31					1.246	44.0			0.181	6.4	0.122	4.3			31
MEAN			0.294	10.4	1.178	41.6	0.882	31.1	0.292	10.3	0.138	4.9	0.099	3.5	MEAN
DAM^3			762.		3154.		2284.		780.		370.		256.		DAM^3
AC-FT				618.		2557.		1851.		633.		300.		207.	AC-FT

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 22

COTTONWOOD CREEK BELOW LARKIN GARDEN DITCH

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.057	2.0	0.396	14.0	0.453	16.0	0.068	2.4	0.014	0.5	0.014	0.5	1
2			0.040	1.4	0.368	13.0	0.396	14.0	0.068	2.4	0.014	0.5	0.011	0.4	2
3			0.023	0.8	0.396	14.0	0.368	13.0	0.065	2.3	0.014	0.5	0.011	0.4	3
4			0.048	1.7	0.453	16.0	0.340	12.0	0.062	2.2	0.011	0.4	0.011	0.4	4
5			0.113	4.0	0.481	17.0	0.312	11.0	0.062	2.2	0.011	0.4	0.008	0.3	5
6			0.204	7.2	0.396	14.0	0.283	10.0	0.059	2.1	0.011	0.4	0.008	0.3	6
7			0.238	8.4	0.340	12.0	0.258	9.1	0.059	2.1	0.011	0.4	0.008	0.3	7
8			0.283	10.0	0.340	12.0	0.238	8.4	0.059	2.1	0.008	0.3	0.006	0.2	8
9			0.269	9.5	0.340	12.0	0.204	7.2	0.057	2.0	0.008	0.3	0.008	0.3	9
10			0.221	7.8	0.368	13.0	0.170	6.0	0.051	1.8	0.008	0.3	0.006	0.2	10
11			0.178	6.3	0.425	15.0	0.153	5.4	0.051	1.8	0.008	0.3	0.006	0.2	11
12			0.170	6.0	0.453	16.0	0.139	4.9	0.051	1.8	0.008	0.3	0.006	0.2	12
13			0.252	8.9	0.481	17.0	0.130	4.6	0.048	1.7	0.028	1.0	0.006	0.2	13
14			0.278	9.8	0.566	20.0	0.122	4.3	0.048	1.7	0.023	0.8	0.006	0.2	14
15			0.312	11.0	0.623	22.0	0.122	4.3	0.042	1.5	0.017	0.6	0.006	0.2	15
16			0.368	13.0	0.623	22.0	0.122	4.3	0.040	1.4	0.014	0.5	0.006	0.2	16
17			0.283	10.0	0.651	23.0	0.122	4.3	0.037	1.3	0.011	0.4	0.006	0.2	17
18			0.244	8.6	0.651	23.0	0.122	4.3	0.034	1.2	0.008	0.3	0.006	0.2	18
19			0.229	8.1	0.651	23.0	0.122	4.3	0.031	1.1	0.008	0.3	0.006	0.2	19
20			0.238	8.4	0.651	23.0	0.122	4.3	0.031	1.1	0.014	0.5	0.006	0.2	20
21			0.244	8.6	0.708	25.0	0.122	4.3	0.031	1.1	0.023	0.8	0.006	0.2	21
22			0.244	8.6	0.708	25.0	0.122	4.3	0.028	1.0	0.014	0.5	0.006	0.2	22
23			0.229	8.1	0.680	24.0	0.122	4.3	0.025	0.9	0.011	0.4	0.006	0.2	23
24			0.212	7.5	0.651	23.0	0.122	4.3	0.025	0.9	0.008	0.3	0.006	0.2	24
25			0.221	7.8	0.623	22.0	0.105	3.7	0.023	0.8	0.008	0.3	0.006	0.2	25
26			0.252	8.9	0.623	22.0	0.088	3.1	0.017	0.6	0.008	0.3	0.006	0.2	26
27			0.312	11.0	0.595	21.0	0.088	3.1	0.017	0.6	0.006	0.2	0.006	0.2	27
28			0.340	12.0	0.566	20.0	0.088	3.1	0.017	0.6	0.025	0.9	0.006	0.2	28
29			0.368	13.0	0.510	18.0	0.074	2.6	0.017	0.6	0.023	0.8	0.006	0.2	29
30			0.368	13.0	0.481	17.0	0.074	2.6	0.014	0.5	0.023	0.8	0.006	0.2	30
31					0.453	16.0			0.014	0.5	0.023	0.8			31
MEAN			0.228	8.0	0.524	18.5	0.177	6.2	0.040	1.4	0.014	0.5	0.007	0.2	MEAN
DAM^3			590.		1404.		457.		108.		37.		18.		DAM^3
AC-FT				479.		1138.		371.		88.		30.		14.	AC-FT

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 23

DAVIS CREEK ABOVE DIVERSION NO. 4

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.396	14.0	1.161	41.0	1.982	70.0	0.368	13.0	0.198	7.0	0.181	6.4	1
2			0.396	14.0	1.218	43.0	1.728	61.0	0.368	13.0	0.198	7.0	0.181	6.4	2
3			0.425	15.0	1.246	44.0	1.671	59.0	0.368	13.0	0.198	7.0	0.190	6.7	3
4			0.510	18.0	1.246	44.0	1.614	57.0	0.340	12.0	0.190	6.7	0.181	6.4	4
5			0.566	20.0	1.331	47.0	1.558	55.0	0.340	12.0	0.190	6.7	0.173	6.1	5
6			0.736	26.0	1.303	46.0	1.473	52.0	0.340	12.0	0.190	6.7	0.173	6.1	6
7			0.538	19.0	1.303	46.0	1.416	50.0	0.312	11.0	0.181	6.4	0.173	6.1	7
8			0.510	18.0	1.359	48.0	1.359	48.0	0.283	10.0	0.190	6.7	0.173	6.1	8
9			0.481	17.0	1.246	44.0	1.303	46.0	0.283	10.0	0.181	6.4	0.164	5.8	9
10			0.425	15.0	1.161	41.0	1.246	44.0	0.283	10.0	0.181	6.4	0.164	5.8	10
11			0.481	17.0	1.133	40.0	1.218	43.0	0.283	10.0	0.190	6.7	0.147	5.2	11
12			0.566	20.0	1.161	41.0	1.161	41.0	0.278	9.8	0.190	6.7	0.139	4.9	12
13			0.538	19.0	1.246	44.0	1.104	39.0	0.278	9.8	0.198	7.0	0.113	4.0	13
14			0.481	17.0	1.274	45.0	1.048	37.0	0.266	9.4	0.210	7.4	0.113	4.0	14
15			0.481	17.0	1.331	47.0	1.020	36.0	0.258	9.1	0.218	7.7	0.122	4.3	15
16			0.396	14.0	1.416	50.0	0.963	34.0	0.258	9.1	0.190	6.7	0.122	4.3	16
17			0.396	14.0	1.614	57.0	0.906	32.0	0.249	8.8	0.181	6.4	0.113	4.0	17
18			0.623	22.0	1.728	61.0	0.850	30.0	0.249	8.8	0.181	6.4	0.113	4.0	18
19			0.878	31.0	1.841	65.0	0.793	28.0	0.238	8.4	0.181	6.4	0.108	3.8	19
20			0.906	32.0	1.926	68.0	0.736	26.0	0.238	8.4	0.218	7.7	0.108	3.8	20
21			0.850	30.0	1.982	70.0	0.708	25.0	0.238	8.4	0.210	7.4	0.096	3.4	21
22			0.850	30.0	2.124	75.0	0.651	23.0	0.238	8.4	0.198	7.0	0.096	3.4	22
23			0.906	32.0	2.266	80.0	0.595	21.0	0.238	8.4	0.181	6.4	0.096	3.4	23
24			0.935	33.0	2.436	86.0	0.538	19.0	0.227	8.0	0.181	6.4	0.096	3.4	24
25			0.906	32.0	2.520	89.0	0.481	17.0	0.227	8.0	0.173	6.1	0.096	3.4	25
26			0.963	34.0	2.549	90.0	0.453	16.0	0.218	7.7	0.173	6.1	0.096	3.4	26
27			0.991	35.0	2.436	86.0	0.396	14.0	0.218	7.7	0.190	6.7	0.096	3.4	27
28			0.963	34.0	2.266	80.0	0.368	13.0	0.218	7.7	0.278	9.8	0.091	3.2	28
29			0.963	34.0	2.096	74.0	0.368	13.0	0.218	7.7	0.218	7.7	0.091	3.2	29
30			1.020	36.0	1.982	70.0	0.368	13.0	0.210	7.4	0.218	7.7	0.091	3.2	30
31					1.897	67.0			0.210	7.4	0.198	7.0			31
MEAN			0.669	23.6	1.571	59.0	1.003	35.4	0.269	9.5	0.196	6.9	0.130	4.6	MEAN
DAM^3			1734.		4472.		2597.		720.		524.		336.		DAM^3
AC-FT				1405.		3626.		2105.		584.		425.		273.	AC-FT

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 24

LINVILLE CREEK AT OLD POWER HOUSE

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.093	3.3	0.102	3.6	0.088	3.1	0.079	2.8	0.074	2.6	0.071	2.5	1
2			0.093	3.3	0.102	3.6	0.085	3.0	0.079	2.8	0.074	2.6	0.068	2.4	2
3			0.093	3.3	0.099	3.5	0.085	3.0	0.079	2.8	0.074	2.6	0.068	2.4	3
4			0.096	3.4	0.093	3.3	0.085	3.0	0.079	2.8	0.071	2.5	0.068	2.4	4
5			0.096	3.4	0.099	3.5	0.088	3.1	0.079	2.8	0.068	2.4	0.068	2.4	5
6			0.108	3.8	0.102	3.6	0.088	3.1	0.074	2.6	0.068	2.4	0.068	2.4	6
7			0.102	3.6	0.102	3.6	0.085	3.0	0.074	2.6	0.068	2.4	0.068	2.4	7
8			0.102	3.6	0.102	3.6	0.085	3.0	0.074	2.6	0.068	2.4	0.068	2.4	8
9			0.099	3.5	0.102	3.6	0.082	2.9	0.074	2.6	0.071	2.5	0.068	2.4	9
10			0.099	3.5	0.102	3.6	0.082	2.9	0.074	2.6	0.071	2.5	0.068	2.4	10
11			0.096	3.4	0.102	3.6	0.082	2.9	0.074	2.6	0.071	2.5	0.068	2.4	11
12			0.099	3.5	0.102	3.6	0.079	2.8	0.074	2.6	0.071	2.5	0.068	2.4	12
13			0.102	3.6	0.108	3.8	0.079	2.8	0.074	2.6	0.071	2.5	0.068	2.4	13
14			0.102	3.6	0.116	4.1	0.079	2.8	0.074	2.6	0.068	2.4	0.068	2.4	14
15			0.108	3.8	0.116	4.1	0.079	2.8	0.074	2.6	0.068	2.4	0.068	2.4	15
16			0.108	3.8	0.116	4.1	0.079	2.8	0.074	2.6	0.068	2.4	0.068	2.4	16
17			0.108	3.8	0.119	4.2	0.082	2.9	0.074	2.6	0.068	2.4	0.068	2.4	17
18			0.102	3.6	0.125	4.4	0.082	2.9	0.074	2.6	0.068	2.4	0.068	2.4	18
19			0.102	3.6	0.125	4.4	0.082	2.9	0.074	2.6	0.068	2.4	0.068	2.4	19
20			0.108	3.8	0.119	4.2	0.082	2.9	0.074	2.6	0.071	2.5	0.068	2.4	20
21			0.108	3.8	0.119	4.2	0.082	2.9	0.074	2.6	0.071	2.5	0.068	2.4	21
22			0.110	3.9	0.119	4.2	0.079	2.8	0.074	2.6	0.071	2.5	0.068	2.4	22
23			0.110	3.9	0.119	4.2	0.079	2.8	0.074	2.6	0.068	2.4	0.068	2.4	23
24			0.108	3.8	0.116	4.1	0.079	2.8	0.074	2.6	0.068	2.4	0.068	2.4	24
25			0.108	3.8	0.110	3.9	0.079	2.8	0.074	2.6	0.068	2.4	0.068	2.4	25
26			0.108	3.8	0.116	4.1	0.079	2.8	0.074	2.6	0.068	2.4	0.068	2.4	26
27			0.108	3.8	0.110	3.9	0.079	2.8	0.074	2.6	0.068	2.4	0.068	2.4	27
28			0.108	3.8	0.102	3.6	0.079	2.8	0.074	2.6	0.079	2.8	0.068	2.4	28
29			0.102	3.6	0.099	3.5	0.079	2.8	0.074	2.6	0.071	2.5	0.068	2.4	29
30			0.102	3.6	0.096	3.4	0.079	2.8	0.074	2.6	0.071	2.5	0.068	2.4	30
31					0.093	3.3			0.074	2.6	0.071	2.5			31
MEAN			0.103	3.6	0.108	3.8	0.082	2.9	0.075	2.6	0.070	2.5	0.068	2.4	MEAN
DAM^3			267.		290.		212.		200.		187.		176.		DAM^3
AC-FT				216.		235.		172.		162.		152.		143.	AC-FT

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 25

FRANKLIN CREEK ABOVE DIVERSIONS

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.119	4.2	0.280	9.9	0.227	8.0	0.096	3.4	0.062	2.2	0.062	2.2	1
2			0.127	4.5	0.272	9.6	0.215	7.6	0.085	3.0	0.062	2.2	0.062	2.2	2
3			0.133	4.7	0.272	9.6	0.215	7.6	0.096	3.4	0.057	2.0	0.062	2.2	3
4			0.136	4.8	0.280	9.9	0.204	7.2	0.091	3.2	0.057	2.0	0.062	2.2	4
5			0.142	5.0	0.283	10.0	0.215	7.6	0.091	3.2	0.057	2.0	0.062	2.2	5
6			0.144	5.1	0.283	10.0	0.215	7.6	0.091	3.2	0.057	2.0	0.057	2.0	6
7			0.150	5.3	0.280	9.9	0.204	7.2	0.085	3.0	0.057	2.0	0.057	2.0	7
8			0.153	5.4	0.272	9.6	0.187	6.6	0.085	3.0	0.057	2.0	0.057	2.0	8
9			0.159	5.6	0.283	10.0	0.164	5.8	0.079	2.8	0.057	2.0	0.057	2.0	9
10			0.161	5.7	0.312	11.0	0.156	5.5	0.079	2.8	0.057	2.0	0.057	2.0	10
11			0.164	5.8	0.283	10.0	0.147	5.2	0.074	2.6	0.057	2.0	0.057	2.0	11
12			0.170	6.0	0.283	10.0	0.136	4.8	0.074	2.6	0.057	2.0	0.057	2.0	12
13			0.176	6.2	0.340	12.0	0.136	4.8	0.074	2.6	0.057	2.0	0.057	2.0	13
14			0.178	6.3	0.396	14.0	0.125	4.4	0.074	2.6	0.074	2.6	0.057	2.0	14
15			0.178	6.3	0.396	14.0	0.125	4.4	0.068	2.4	0.068	2.4	0.057	2.0	15
16			0.178	6.3	0.368	13.0	0.136	4.8	0.068	2.4	0.062	2.2	0.057	2.0	16
17			0.178	6.3	0.368	13.0	0.156	5.5	0.062	2.2	0.062	2.2	0.057	2.0	17
18			0.178	6.3	0.340	12.0	0.156	5.5	0.062	2.2	0.062	2.2	0.057	2.0	18
19			0.178	6.3	0.368	13.0	0.156	5.5	0.068	2.4	0.062	2.2	0.057	2.0	19
20			0.184	6.5	0.425	15.0	0.125	4.4	0.068	2.4	0.074	2.6	0.057	2.0	20
21			0.193	6.8	0.453	16.0	0.116	4.1	0.074	2.6	0.074	2.6	0.057	2.0	21
22			0.195	6.9	0.453	16.0	0.116	4.1	0.074	2.6	0.068	2.4	0.057	2.0	22
23			0.198	7.0	0.453	16.0	0.108	3.8	0.074	2.6	0.068	2.4	0.057	2.0	23
24			0.204	7.2	0.425	15.0	0.108	3.8	0.074	2.6	0.062	2.2	0.057	2.0	24
25			0.210	7.4	0.396	14.0	0.096	3.4	0.068	2.4	0.062	2.2	0.057	2.0	25
26			0.221	7.8	0.396	14.0	0.085	3.0	0.068	2.4	0.062	2.2	0.057	2.0	26
27			0.246	8.7	0.368	13.0	0.085	3.0	0.068	2.4	0.062	2.2	0.057	2.0	27
28			0.263	9.3	0.340	12.0	0.085	3.0	0.068	2.4	0.108	3.8	0.057	2.0	28
29			0.263	9.3	0.283	10.0	0.085	3.0	0.068	2.4	0.085	3.0	0.057	2.0	29
30			0.280	9.9	0.266	9.4	0.085	3.0	0.068	2.4	0.079	2.8	0.057	2.0	30
31					0.255	9.0			0.068	2.4	0.068	2.4			31
MEAN			0.182	6.4	0.338	11.9	0.146	5.1	0.075	2.7	0.065	2.3	0.058	2.0	MEAN
DAM^3			472.		904.		377.		202.		174.		149.		DAM^3
AC-FT				382.		733.		306.		164.		141.		121.	AC-FT

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 26

JOSEPH CREEK BELOW COUCH CREEK

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.275	9.7	1.189	42.0	0.368	13.0	0.144	5.1	0.051	1.8	0.048	1.7	1
2			0.258	9.1	1.020	36.0	0.340	12.0	0.144	5.1	0.051	1.8	0.048	1.7	2
3			0.275	9.7	1.020	36.0	0.340	12.0	0.139	4.9	0.051	1.8	0.048	1.7	3
4			0.340	12.0	1.048	37.0	0.340	12.0	0.125	4.4	0.048	1.7	0.048	1.7	4
5			0.481	17.0	1.558	55.0	0.340	12.0	0.119	4.2	0.048	1.7	0.048	1.7	5
6			0.765	27.0	1.246	44.0	0.340	12.0	0.116	4.1	0.048	1.7	0.045	1.6	6
7			0.708	25.0	1.133	40.0	0.312	11.0	0.110	3.9	0.048	1.7	0.045	1.6	7
8			0.708	25.0	1.020	36.0	0.283	10.0	0.105	3.7	0.048	1.7	0.045	1.6	8
9			0.708	25.0	1.076	38.0	0.263	9.3	0.102	3.6	0.048	1.7	0.045	1.6	9
10			0.566	20.0	0.935	33.0	0.263	9.3	0.096	3.4	0.048	1.7	0.045	1.6	10
11			0.481	17.0	0.736	26.0	0.249	8.8	0.093	3.3	0.048	1.7	0.042	1.5	11
12			0.566	20.0	0.736	26.0	0.238	8.4	0.088	3.1	0.051	1.8	0.042	1.5	12
13			0.821	29.0	0.793	28.0	0.232	8.2	0.085	3.0	0.054	1.9	0.042	1.5	13
14			0.850	30.0	0.906	32.0	0.212	7.5	0.079	2.8	0.059	2.1	0.042	1.5	14
15			1.133	40.0	1.048	37.0	0.212	7.5	0.076	2.7	0.057	2.0	0.042	1.5	15
16			1.416	50.0	1.048	37.0	0.227	8.0	0.085	3.0	0.054	1.9	0.042	1.5	16
17			1.076	38.0	1.020	36.0	0.258	9.1	0.088	3.1	0.051	1.8	0.042	1.5	17
18			0.793	28.0	0.991	35.0	0.238	8.4	0.085	3.0	0.048	1.7	0.042	1.5	18
19			0.680	24.0	0.906	32.0	0.212	7.5	0.076	2.7	0.048	1.7	0.042	1.5	19
20			0.680	24.0	0.906	32.0	0.207	7.3	0.068	2.4	0.051	1.8	0.042	1.5	20
21			0.736	26.0	0.878	31.0	0.198	7.0	0.068	2.4	0.054	1.9	0.042	1.5	21
22			0.821	29.0	0.906	32.0	0.184	6.5	0.068	2.4	0.051	1.8	0.042	1.5	22
23			0.793	28.0	0.850	30.0	0.176	6.2	0.062	2.2	0.051	1.8	0.042	1.5	23
24			0.708	25.0	0.793	28.0	0.170	6.0	0.057	2.0	0.048	1.7	0.042	1.5	24
25			0.793	28.0	0.680	24.0	0.161	5.7	0.054	1.9	0.048	1.7	0.042	1.5	25
26			1.048	37.0	0.623	22.0	0.159	5.6	0.054	1.9	0.048	1.7	0.042	1.5	26
27			1.246	44.0	0.623	22.0	0.156	5.5	0.054	1.9	0.048	1.7	0.042	1.5	27
28			1.218	43.0	0.595	21.0	0.153	5.4	0.051	1.8	0.065	2.3	0.042	1.5	28
29			1.104	39.0	0.510	18.0	0.147	5.2	0.051	1.8	0.057	2.0	0.042	1.5	29
30			1.020	36.0	0.481	17.0	0.144	5.1	0.051	1.8	0.054	1.9	0.042	1.5	30
31					0.425	15.0			0.051	1.8	0.054	1.9			31
MEAN			0.769	27.2	0.893	31.5	0.237	8.4	0.085	3.0	0.051	1.8	0.044	1.6	MEAN
DAM^3			1992.		2391.		615.		228.		137.		114.		DAM^3
AC-FT				1615.		1939.		499.		185.		111.		92.	AC-FT

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 27

THOMS CREEK AT CEDARVILLE ALTURAS HIGHWAY

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.368	13.0	1.161	41.0	0.252	8.9	0.051	1.8	0.028	1.0	0.034	1.2	1
2			0.340	12.0	1.189	42.0	0.215	7.6	0.051	1.8	0.028	1.0	0.028	1.0	2
3			0.258	9.1	1.416	50.0	0.198	7.0	0.045	1.6	0.028	1.0	0.028	1.0	3
4			0.396	14.0	1.246	44.0	0.198	7.0	0.042	1.5	0.020	0.7	0.028	1.0	4
5			0.595	21.0	1.161	41.0	0.184	6.5	0.042	1.5	0.020	0.7	0.023	0.8	5
6			0.765	27.0	0.963	34.0	0.170	6.0	0.042	1.5	0.017	0.6	0.023	0.8	6
7			0.680	24.0	0.878	31.0	0.159	5.6	0.042	1.5	0.017	0.6	0.017	0.6	7
8			0.736	26.0	0.821	29.0	0.153	5.4	0.042	1.5	0.014	0.5	0.014	0.5	8
9			0.765	27.0	0.793	28.0	0.142	5.0	0.042	1.5	0.011	0.4	0.011	0.4	9
10			0.651	23.0	0.821	29.0	0.130	4.6	0.042	1.5	0.011	0.4	0.011	0.4	10
11			0.623	22.0	0.935	33.0	0.119	4.2	0.042	1.5	0.011	0.4	0.008	0.3	11
12			0.680	24.0	1.076	38.0	0.108	3.8	0.042	1.5	0.014	0.5	0.008	0.3	12
13			1.020	36.0	1.020	36.0	0.108	3.8	0.042	1.5	0.017	0.6	0.008	0.3	13
14			1.133	40.0	0.963	34.0	0.113	4.0	0.042	1.5	0.020	0.7	0.008	0.3	14
15			1.303	46.0	1.020	36.0	0.113	4.0	0.042	1.5	0.023	0.8	0.006	0.2	15
16			1.444	51.0	1.020	36.0	0.125	4.4	0.040	1.4	0.028	1.0	0.006	0.2	16
17			1.189	42.0	1.048	37.0	0.164	5.8	0.040	1.4	0.028	1.0	0.003	0.1	17
18			1.048	37.0	1.076	38.0	0.142	5.0	0.040	1.4	0.028	1.0	0.003	0.1	18
19			0.906	32.0	1.076	38.0	0.136	4.8	0.040	1.4	0.028	1.0	0.003	0.1	19
20			0.878	31.0	1.020	36.0	0.102	3.6	0.040	1.4	0.051	1.8	0.003	0.1	20
21			0.878	31.0	0.963	34.0	0.088	3.1	0.042	1.5	0.057	2.0	0.006	0.2	21
22			0.878	31.0	0.878	31.0	0.076	2.7	0.042	1.5	0.040	1.4	0.006	0.2	22
23			0.878	31.0	0.765	27.0	0.068	2.4	0.040	1.4	0.034	1.2	0.006	0.2	23
24			0.821	29.0	0.623	22.0	0.062	2.2	0.040	1.4	0.034	1.2	0.006	0.2	24
25			0.793	28.0	0.566	20.0	0.054	1.9	0.034	1.2	0.034	1.2	0.006	0.2	25
26			0.878	31.0	0.481	17.0	0.054	1.9	0.031	1.1	0.034	1.2	0.006	0.2	26
27			1.076	38.0	0.425	15.0	0.054	1.9	0.031	1.1	0.040	1.4	0.003	0.1	27
28			1.104	39.0	0.396	14.0	0.054	1.9	0.028	1.0	0.048	1.7	0.003	0.1	28
29			1.104	39.0	0.340	12.0	0.054	1.9	0.028	1.0	0.045	1.6	0.003	0.1	29
30			1.161	41.0	0.283	10.0	0.054	1.9	0.028	1.0	0.042	1.5	0.003	0.1	30
31					0.266	9.4			0.028	1.0	0.034	1.2			31
MEAN			0.845	29.8	0.861	30.4	0.122	4.3	0.040	1.4	0.029	1.0	0.011	0.4	MEAN
DAM^3			2189.		2304.		315.		106.		77.		28.		DAM^3
AC-FT				1774.		1868.		255.		86.		62.		22.	AC-FT

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 28

NORTH FORK PIT RIVER ABOVE PARKER CREEK

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			1.501	53.0	2.436	86.0	0.623	22.0	0.184	6.5	0.023	0.8	0.031	1.1	1
2			1.359	48.0	2.436	86.0	0.481	17.0	0.193	6.8	0.023	0.8	0.028	1.0	2
3			1.303	46.0	2.436	86.0	0.425	15.0	0.184	6.5	0.020	0.7	0.028	1.0	3
4			1.303	46.0	2.634	93.0	0.680	24.0	0.181	6.4	0.017	0.6	0.025	0.9	4
5			1.501	53.0	3.087	109.0	0.623	22.0	0.178	6.3	0.017	0.6	0.025	0.9	5
6			2.379	84.0	3.455	122.0	0.566	20.0	0.176	6.2	0.028	1.0	0.025	0.9	6
7			2.747	97.0	3.398	120.0	0.481	17.0	0.173	6.1	0.023	0.8	0.025	0.9	7
8			2.379	84.0	3.965	140.0	0.425	15.0	0.170	6.0	0.020	0.7	0.025	0.9	8
9			2.436	86.0	3.200	113.0	0.340	12.0	0.170	6.0	0.023	0.8	0.037	1.3	9
10			2.124	75.0	2.209	78.0	0.272	9.6	0.142	5.0	0.028	1.0	0.034	1.2	10
11			3.200	113.0	1.982	70.0	0.272	9.6	0.113	4.0	0.028	1.0	0.023	0.8	11
12			3.965	140.0	1.982	70.0	0.232	8.2	0.085	3.0	0.028	1.0	0.042	1.5	12
13			2.889	102.0	2.067	73.0	0.198	7.0	0.071	2.5	0.025	0.9	0.028	1.0	13
14			2.832	100.0	2.351	83.0	0.164	5.8	0.062	2.2	0.051	1.8	0.045	1.6	14
15			2.889	102.0	2.549	90.0	0.144	5.1	0.051	1.8	0.085	3.0	0.051	1.8	15
16			3.200	113.0	2.492	88.0	0.221	7.8	0.037	1.3	0.079	2.8	0.062	2.2	16
17			3.087	109.0	2.436	86.0	0.312	11.0	0.037	1.3	0.071	2.5	0.079	2.8	17
18			3.257	115.0	2.266	80.0	0.396	14.0	0.028	1.0	0.062	2.2	0.042	1.5	18
19			2.747	97.0	2.124	75.0	0.510	18.0	0.025	0.9	0.045	1.6	0.028	1.0	19
20			2.436	86.0	2.039	72.0	0.566	20.0	0.025	0.9	0.034	1.2	0.028	1.0	20
21			2.351	83.0	1.982	70.0	0.510	18.0	0.028	1.0	0.025	0.9	0.034	1.2	21
22			2.351	83.0	1.897	67.0	0.396	14.0	0.031	1.1	0.020	0.7	0.031	1.1	22
23			2.436	86.0	1.812	64.0	0.312	11.0	0.034	1.2	0.020	0.7	0.028	1.0	23
24			2.266	80.0	1.671	59.0	0.212	7.5	0.037	1.3	0.020	0.7	0.028	1.0	24
25			2.124	75.0	1.444	51.0	0.198	7.0	0.037	1.3	0.020	0.7	0.028	1.0	25
26			2.294	81.0	1.303	46.0	0.195	6.9	0.034	1.2	0.020	0.7	0.028	1.0	26
27			2.747	97.0	1.189	42.0	0.193	6.8	0.025	0.9	0.025	0.9	0.028	1.0	27
28			2.577	91.0	1.189	42.0	0.178	6.3	0.025	0.9	0.045	1.6	0.028	1.0	28
29			2.436	86.0	1.161	41.0	0.173	6.1	0.028	1.0	0.071	2.5	0.028	1.0	29
30			2.266	80.0	0.935	33.0	0.176	6.2	0.025	0.9	0.042	1.5	0.028	1.0	30
31					0.680	24.0			0.025	0.9	0.042	1.5			31
MEAN			2.446	86.4	2.155	76.1	0.349	12.3	0.084	3.0	0.035	1.2	0.034	1.2	MEAN
DAM^3			6335.		5768.		904.		226.		93.		87.		DAM^3
AC-FT				5136.		4676.		733.		183.		76.		71.	AC-FT

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 29

PARKER CREEK AT FOGARTY RANCH

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			1.189	42.0	2.634	93.0	0.510	18.0	0.136	4.8	0.130	4.6	0.178	6.3	1
2			1.161	41.0	2.492	88.0	0.481	17.0	0.133	4.7	0.091	3.2	0.164	5.8	2
3			1.161	41.0	2.549	90.0	0.623	22.0	0.136	4.8	0.091	3.2	0.159	5.6	3
4			1.218	43.0	2.520	89.0	0.538	19.0	0.119	4.2	0.085	3.0	0.150	5.3	4
5			1.614	57.0	2.407	85.0	0.510	18.0	0.119	4.2	0.085	3.0	0.144	5.1	5
6			2.011	71.0	2.124	75.0	0.481	17.0	0.119	4.2	0.057	2.0	0.125	4.4	6
7			1.869	66.0	1.982	70.0	0.396	14.0	0.116	4.1	0.006	0.2	0.071	2.5	7
8			1.954	69.0	1.869	66.0	0.396	14.0	0.116	4.1	0.003	0.1	0.008	0.3	8
9			2.237	79.0	1.954	69.0	0.368	13.0	0.119	4.2	0.003	0.1	0.006	0.2	9
10			1.728	61.0	1.982	70.0	0.340	12.0	0.110	3.9	0.003	0.1	0.003	0.1	10
11			2.124	75.0	2.011	71.0	0.312	11.0	0.116	4.1	0.003	0.1	0.000	0.0	11
12			1.982	70.0	2.011	71.0	0.312	11.0	0.108	3.8	0.003	0.1	0.000	0.0	12
13			2.436	86.0	2.011	71.0	0.272	9.6	0.125	4.4	0.006	0.2	0.000	0.0	13
14			2.719	96.0	2.181	77.0	0.255	9.0	0.127	4.5	0.017	0.6	0.000	0.0	14
15			3.228	114.0	2.209	78.0	0.255	9.0	0.119	4.2	0.040	1.4	0.000	0.0	15
16			3.144	111.0	2.152	76.0	0.283	10.0	0.113	4.0	0.150	5.3	0.000	0.0	16
17			2.690	95.0	1.982	70.0	0.538	19.0	0.110	3.9	0.108	3.8	0.000	0.0	17
18			2.492	88.0	1.926	68.0	0.510	18.0	0.105	3.7	0.085	3.0	0.000	0.0	18
19			2.011	71.0	1.784	63.0	0.425	15.0	0.108	3.8	0.079	2.8	0.000	0.0	19
20			2.011	71.0	1.784	63.0	0.312	11.0	0.105	3.7	0.113	4.0	0.000	0.0	20
21			2.152	76.0	1.728	61.0	0.204	7.2	0.113	4.0	0.198	7.0	0.000	0.0	21
22			2.124	75.0	1.671	59.0	0.144	5.1	0.130	4.6	0.164	5.8	0.000	0.0	22
23			1.926	68.0	1.728	61.0	0.113	4.0	0.110	3.9	0.144	5.1	0.102	3.6	23
24			1.812	64.0	1.501	53.0	0.105	3.7	0.108	3.8	0.150	5.3	0.102	3.6	24
25			1.982	70.0	1.388	49.0	0.105	3.7	0.105	3.7	0.130	4.6	0.102	3.6	25
26			2.266	80.0	1.303	46.0	0.119	4.2	0.105	3.7	0.125	4.4	0.102	3.6	26
27			2.690	95.0	1.274	45.0	0.125	4.4	0.105	3.7	0.130	4.6	0.102	3.6	27
28			2.775	98.0	1.048	37.0	0.119	4.2	0.105	3.7	0.224	7.9	0.102	3.6	28
29			2.662	94.0	0.906	32.0	0.119	4.2	0.096	3.4	0.283	10.0	0.102	3.6	29
30			2.690	95.0	0.708	25.0	0.133	4.7	0.082	2.9	0.238	8.4	0.102	3.6	30
31					0.566	20.0			0.079	2.8	0.207	7.3			31
MEAN			2.135	75.4	1.819	64.2	0.313	11.1	0.113	4.0	0.102	3.6	0.061	2.1	MEAN
DAM^3			5531.		4868.		812.		302.		272.		157.		DAM^3
AC-FT				4484.		3947.		658.		245.		220.		128.	AC-FT

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 30

PARKER CREEK NEAR MOUTH

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			1.020	36.0	3.483	123.0	0.340	12.0	0.079	2.8	0.028	1.0	0.017	0.6	1
2			0.906	32.0	3.059	108.0	0.198	7.0	0.079	2.8	0.023	0.8	0.011	0.4	2
3			0.708	25.0	3.030	107.0	0.198	7.0	0.076	2.7	0.076	2.7	0.011	0.4	3
4			0.906	32.0	2.832	100.0	0.255	9.0	0.074	2.6	0.065	2.3	0.008	0.3	4
5			1.614	57.0	2.436	86.0	0.425	15.0	0.074	2.6	0.051	1.8	0.008	0.3	5
6			2.690	95.0	1.982	70.0	0.510	18.0	0.071	2.5	0.057	2.0	0.006	0.2	6
7			2.407	85.0	1.897	67.0	0.510	18.0	0.071	2.5	0.014	0.5	0.006	0.2	7
8			2.492	88.0	1.756	62.0	0.453	16.0	0.071	2.5	0.011	0.4	0.003	0.1	8
9			3.285	116.0	1.812	64.0	0.453	16.0	0.068	2.4	0.003	0.1	0.000	0.0	9
10			2.520	89.0	1.841	65.0	0.453	16.0	0.068	2.4	0.017	0.6	0.000	0.0	10
11			3.512	124.0	1.982	70.0	0.481	17.0	0.054	1.9	0.017	0.6	0.000	0.0	11
12			3.228	114.0	2.181	77.0	0.396	14.0	0.048	1.7	0.014	0.5	0.000	0.0	12
13			3.936	139.0	2.152	76.0	0.340	12.0	0.042	1.5	0.017	0.6	0.000	0.0	13
14			4.135	146.0	2.322	82.0	0.255	9.0	0.040	1.4	0.028	1.0	0.000	0.0	14
15			4.503	159.0	2.464	87.0	0.227	8.0	0.028	1.0	0.031	1.1	0.000	0.0	15
16			5.352	189.0	2.436	86.0	0.227	8.0	0.028	1.0	0.023	0.8	0.000	0.0	16
17			4.560	161.0	1.982	70.0	0.227	8.0	0.023	0.8	0.023	0.8	0.000	0.0	17
18			4.135	146.0	2.067	73.0	0.255	9.0	0.031	1.1	0.031	1.1	0.000	0.0	18
19			3.483	123.0	2.011	71.0	0.283	10.0	0.051	1.8	0.031	1.1	0.000	0.0	19
20			3.030	107.0	1.926	68.0	0.312	11.0	0.059	2.1	0.006	0.2	0.000	0.0	20
21			3.087	109.0	1.812	64.0	0.255	9.0	0.062	2.2	0.003	0.1	0.000	0.0	21
22			3.144	111.0	1.529	54.0	0.170	6.0	0.068	2.4	0.000	0.0	0.000	0.0	22
23			2.917	103.0	1.416	50.0	0.142	5.0	0.059	2.1	0.000	0.0	0.000	0.0	23
24			2.605	92.0	1.303	46.0	0.113	4.0	0.057	2.0	0.000	0.0	0.000	0.0	24
25			2.549	90.0	1.161	41.0	0.096	3.4	0.059	2.1	0.000	0.0	0.000	0.0	25
26			3.002	106.0	1.246	44.0	0.093	3.3	0.062	2.2	0.000	0.0	0.000	0.0	26
27			3.908	138.0	0.821	29.0	0.091	3.2	0.048	1.7	0.003	0.1	0.000	0.0	27
28			3.908	138.0	0.736	26.0	0.088	3.1	0.045	1.6	0.011	0.4	0.000	0.0	28
29			3.823	135.0	0.566	20.0	0.085	3.0	0.045	1.6	0.048	1.7	0.000	0.0	29
30			3.512	124.0	0.453	16.0	0.079	2.8	0.040	1.4	0.031	1.1	0.000	0.0	30
31					0.425	15.0			0.031	1.1	0.028	1.0			31
MEAN			3.029	107.0	1.843	65.1	0.267	9.4	0.055	2.0	0.022	0.8	0.002	0.1	MEAN
DAM^3			7847.		4932.		691.		148.		60.		6.		DAM^3
AC-FT				6361.		3998.		561.		120.		48.		5.	AC-FT

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

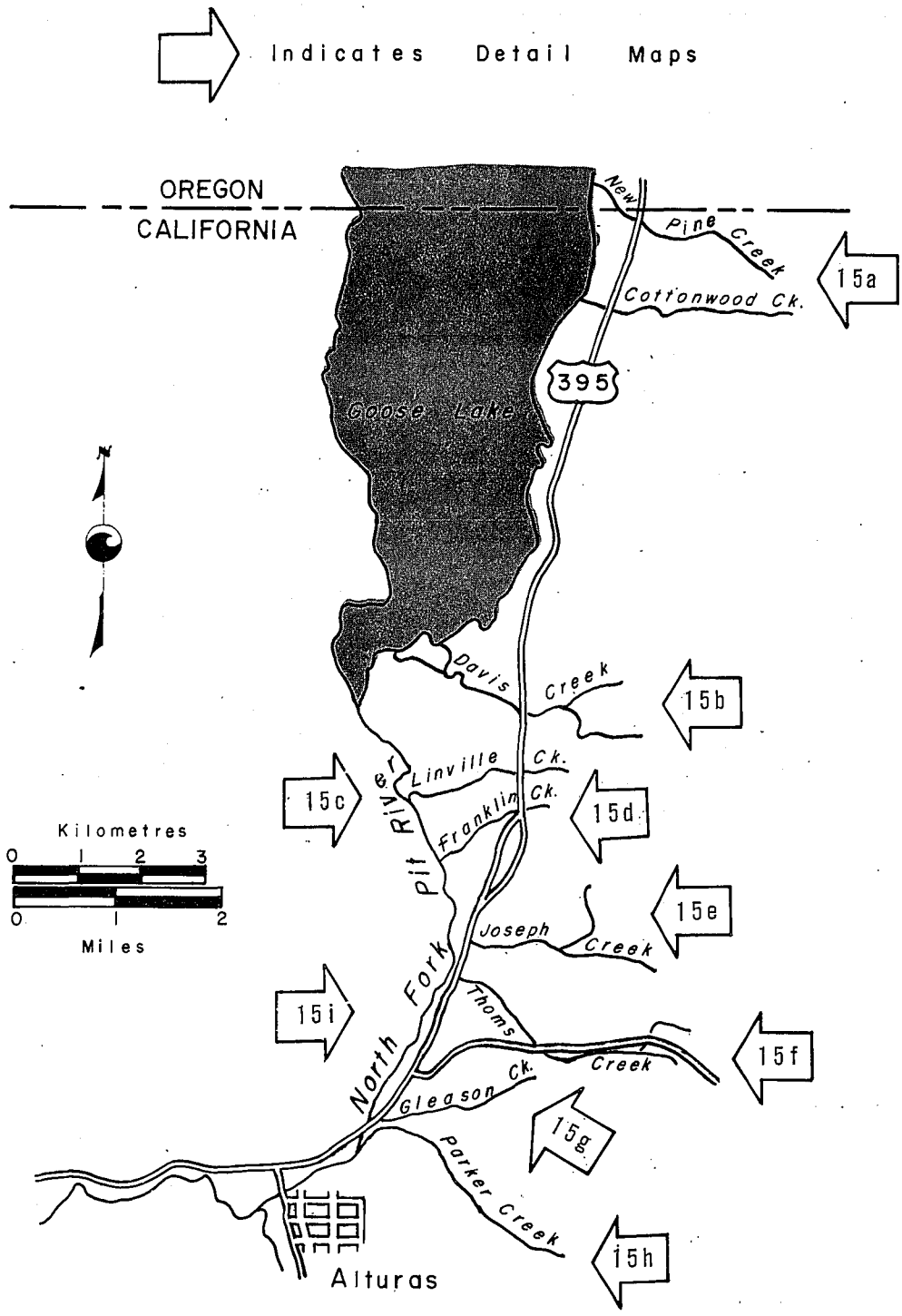
TABLE 31

SHIELDS CREEK BELOW PEPPERDINE RANCH

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1					0.280	9.9	0.136	4.8	0.082	2.9	0.076	2.7	0.068	2.4	1
2					0.280	9.9	0.130	4.6	0.082	2.9	0.076	2.7	0.068	2.4	2
3					0.312	11.0	0.122	4.3	0.082	2.9	0.074	2.6	0.068	2.4	3
4					0.312	11.0	0.116	4.1	0.082	2.9	0.074	2.6	0.068	2.4	4
5					0.283	10.0	0.110	3.9	0.082	2.9	0.074	2.6	0.068	2.4	5
6					0.255	9.0	0.110	3.9	0.082	2.9	0.074	2.6	0.068	2.4	6
7					0.232	8.2	0.105	3.7	0.076	2.7	0.074	2.6	0.068	2.4	7
8					0.210	7.4	0.099	3.5	0.076	2.7	0.074	2.6	0.068	2.4	8
9					0.204	7.2	0.093	3.3	0.076	2.7	0.074	2.6	0.068	2.4	9
10					0.204	7.2	0.093	3.3	0.076	2.7	0.074	2.6	0.068	2.4	10
11					0.210	7.4	0.088	3.1	0.082	2.9	0.074	2.6	0.068	2.4	11
12					0.227	8.0	0.082	2.9	0.082	2.9	0.074	2.6	0.062	2.2	12
13					0.249	8.8	0.082	2.9	0.076	2.7	0.074	2.6	0.062	2.2	13
14					0.272	9.6	0.082	2.9	0.076	2.7	0.076	2.7	0.062	2.2	14
15					0.280	9.9	0.082	2.9	0.082	2.9	0.076	2.7	0.062	2.2	15
16					0.283	10.0	0.082	2.9	0.082	2.9	0.074	2.6	0.062	2.2	16
17					0.312	11.0	0.093	3.3	0.088	3.1	0.074	2.6	0.062	2.2	17
18					0.312	11.0	0.093	3.3	0.082	2.9	0.074	2.6	0.062	2.2	18
19			0.161	5.7*	0.283	10.0	0.093	3.3	0.088	3.1	0.074	2.6	0.057	2.0	19
20			0.147	5.2	0.283	10.0	0.088	3.1	0.088	3.1	0.076	2.7	0.057	2.0	20
21			0.147	5.2	0.280	9.9	0.088	3.1	0.093	3.3	0.076	2.7	0.057	2.0	21
22			0.156	5.5	0.272	9.6	0.093	3.3	0.082	2.9	0.074	2.6	0.057	2.0	22
23			0.147	5.2	0.263	9.3	0.093	3.3	0.082	2.9	0.068	2.4	0.057	2.0	23
24			0.142	5.0	0.241	8.5	0.093	3.3	0.082	2.9	0.068	2.4	0.057	2.0	24
25			0.156	5.5	0.232	8.2	0.088	3.1	0.076	2.7	0.068	2.4	0.057	2.0	25
26			0.176	6.2	0.227	8.0	0.088	3.1	0.082	2.9	0.068	2.4	0.057	2.0	26
27			0.227	8.0	0.210	7.4	0.088	3.1	0.082	2.9	0.068	2.4	0.057	2.0	27
28			0.249	8.8	0.195	6.9	0.082	2.9	0.082	2.9	0.088	3.1	0.057	2.0	28
29			0.263	9.3	0.176	6.2	0.082	2.9	0.082	2.9	0.076	2.7	0.057	2.0	29
30			0.272	9.6	0.161	5.7	0.082	2.9	0.076	2.7	0.074	2.6	0.057	2.0	30
31					0.147	5.2			0.076	2.7	0.074	2.6			31
MEAN			0.075	2.6	0.248	8.8	0.095	3.4	0.081	2.9	0.074	2.6	0.062	2.2	MEAN
DAM^3			194.		664.		247.		218.		198.		161.		DAM^3
AC-FT				157.		538.		200.		177.		160.		130.	AC-FT

* Beginning of record

Figure 15



INDEX MAP NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

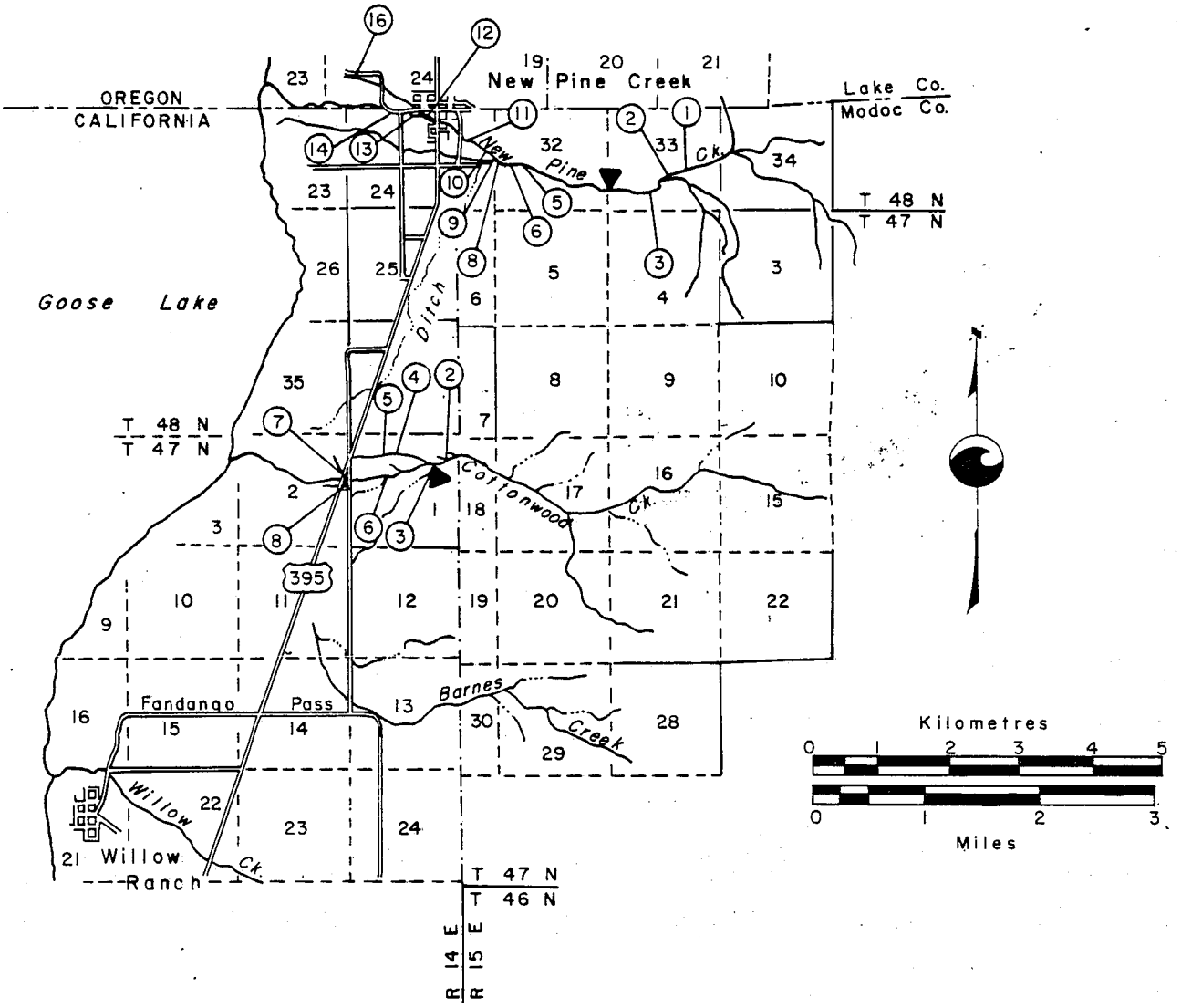
NEW PINE CREEK

Diversion Number	Name	m^3/s	ft^3/s
1,2,3	Clemons, R.	0.006	0.23
5	Butler, W.	0.018	0.65
	Butler, T.	0.014	0.51
6	Brocco, F.	0.0006	0.02
	Guerne, G.	0.0008	0.03
	Stevens, L.	0.009	0.33
	Beachler, B.	0.004	0.15
	Fernwood, S.	0.005	0.18
8	California Ditch		
	Nelson, L.	0.020	0.70
	Stringer, R.	0.039	1.39
	Cunduff, J.	0.016	0.57
	Roberts, A.	0.009	0.33
	Cundiff, H.	0.019	0.66
	Pochop, L.	0.008	0.30
	Smith, M.	0.002	0.08
	Cloud, C.	0.018	0.62
	Steward, P.	0.016	0.55
	Lawson, T.	0.029	1.04
9,10	Beachler, B.	0.028	0.97[1/]
11	Boutin, H.	0.0006	0.02[2/]
12	Johnston, O.	0.0006	0.02[2/]
13	Lawson, T.	0.240	8.48
14,16	Lawson, T.	0.110	3.89
	COTTONWOOD CREEK		
2	Allen	0.045	1.60
3	Fleming	0.130	4.60
	Perry	0.034	1.20
4	Weidner (Pipeline)	0.116	4.10
5	Fleming	0.033	1.15
6	U. R. Ranch	0.045	1.60
	Perry	0.031	1.10

1/ Diverted at 8
2/ Diverted at 6

NOTE: Cottonwood Creek diversions 7 & 8 belong to Vincent and are used only during high flows.

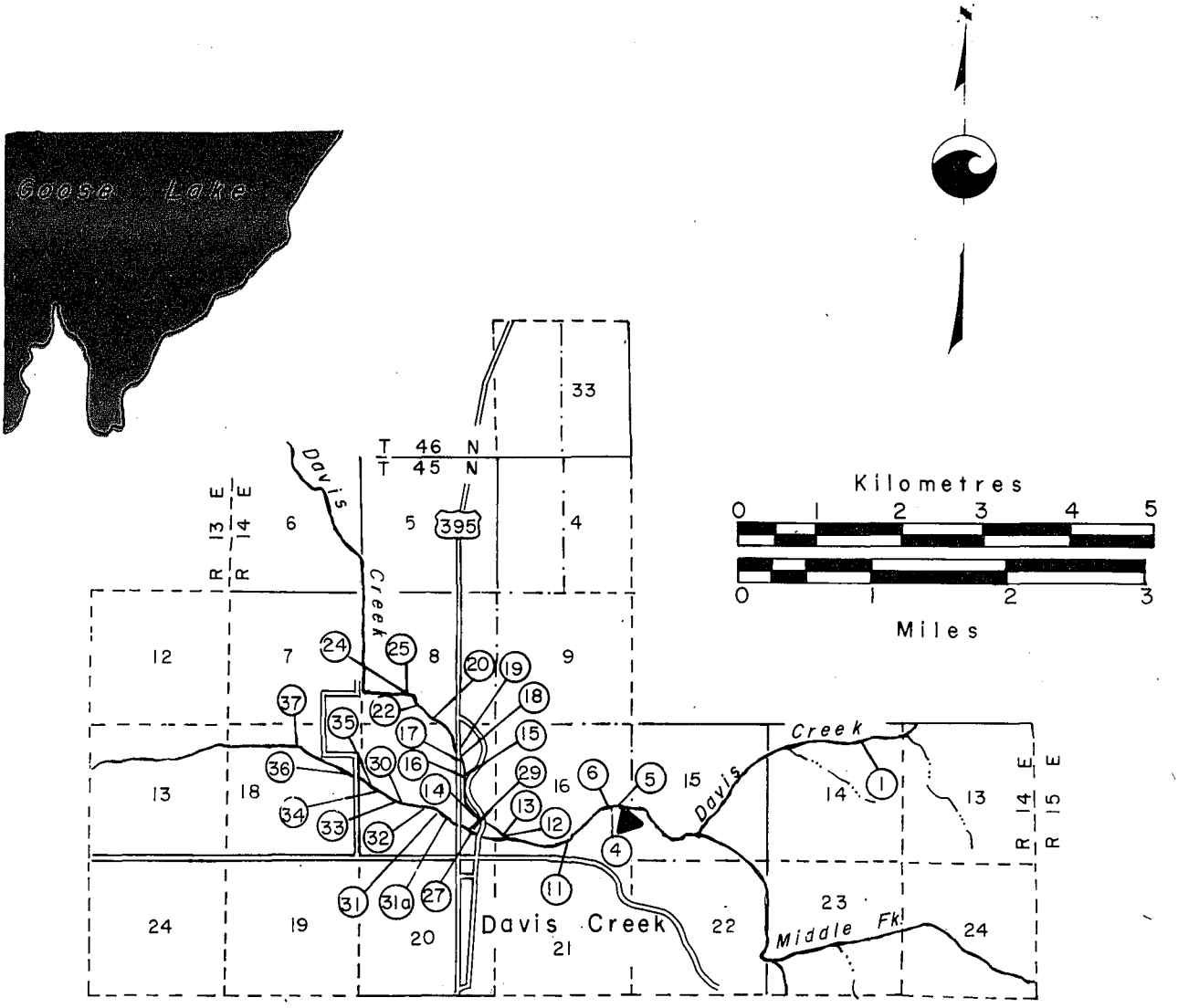
Figure 15a



DIVERSIONS FROM COTTONWOOD AND NEW PINE CREEKS NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
1	Pangborn	0.011	0.40
3	Gardner	0.011	0.40
4	Eddie	0.023	0.80
5	Tilson	0.003	0.10
6	Baker	0.011	0.40
	Dollarhide	0.002	0.06
8	Eddie	0.004	0.15
	Brunnemer	0.004	0.15
	Reith	0.006	0.20
	James	0.003	0.1125
	Shedd	0.001	0.0375
	King	0.004	0.15
	Brear	0.004	0.15
	Pointere	0.001	0.04
4-5,11, 16,19-20, 22,24-25	Davis	0.178	6.30
12-13,16 27,30-31, 31a	Tilson	0.040	1.40
14	Eagleston	0.004	0.15
15,17-19	Thompson	0.042	1.50
21	Foothill Plumbing	0.018	0.65
1,27,29, 32-37	Grace	1.117	39.45

Figure 15b

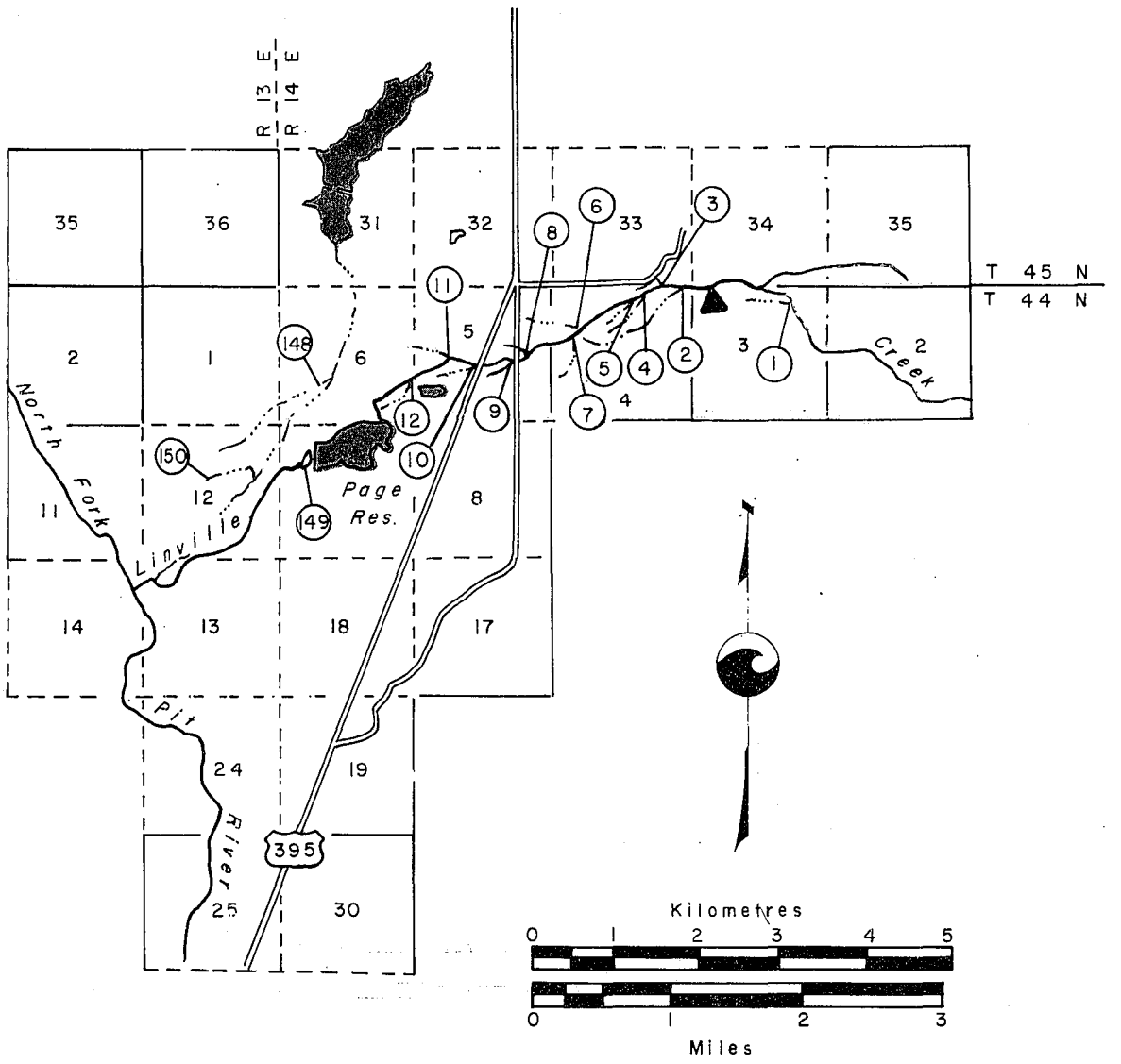


▲ Watermaster installed recorder station

DIVERSIONS FROM DAVIS CREEK NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
1	Burns	0.003	0.1
2-10	Gardner	0.108	3.8
11-12	Capik	0.035	1.25
12,148-150	Curtis	0.089	3.15

Figure 15c

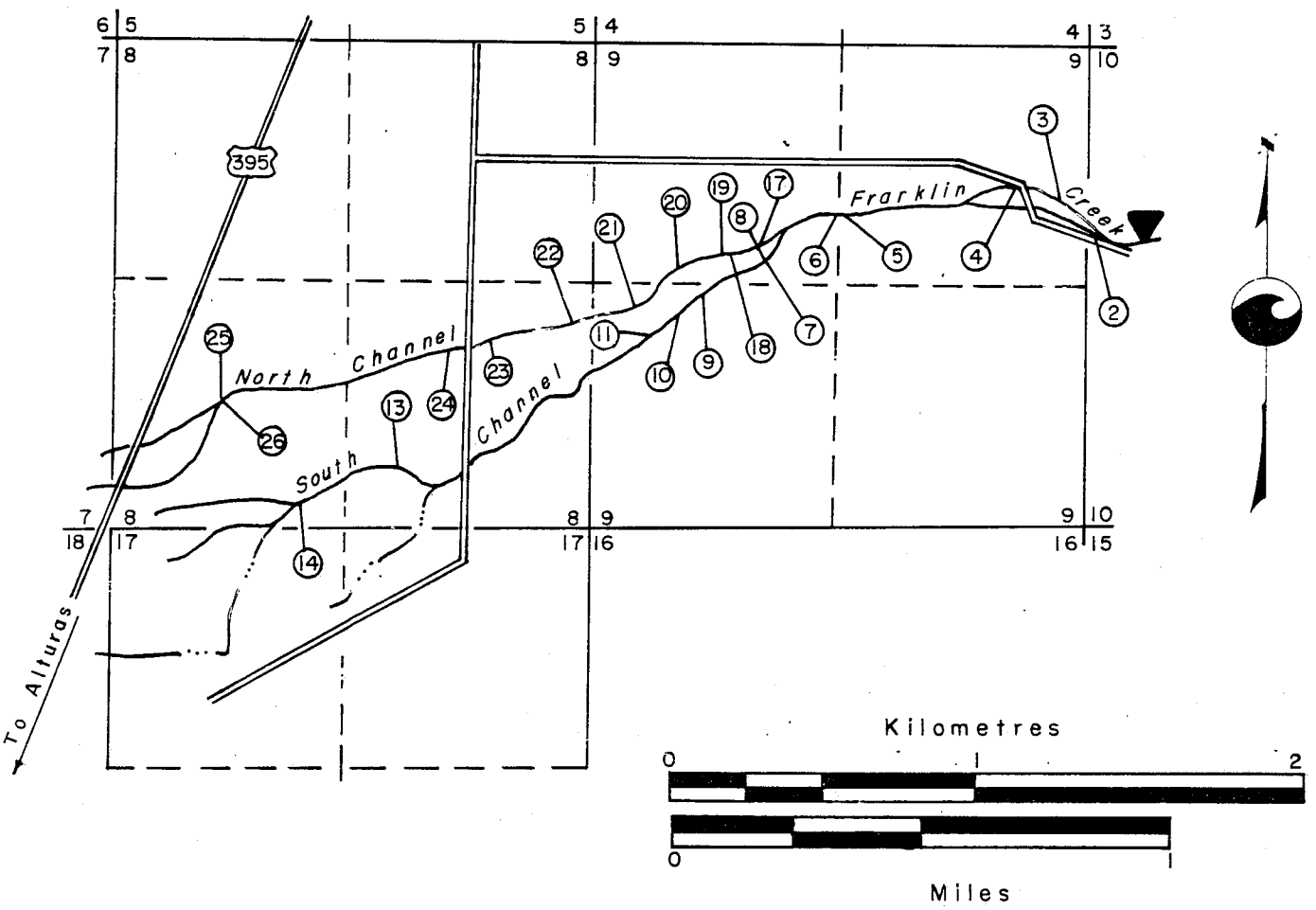


▲ Watermaster installed recorder station.

DIVERSIONS FROM LINVILLE CREEK NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
2-4	Curtis	0.015	0.53
5-6	Curtis	0.013	0.46
7-8	Gardner	0.077	2.72
9-11	Curtis	0.011	0.40
13-14	Goulding	0.028	1.00
17-22,25	Curtis	0.083	2.93
21	Diablo Vista	0.065	2.31
23-24,26	Goulding	0.037	1.31

Figure 15d



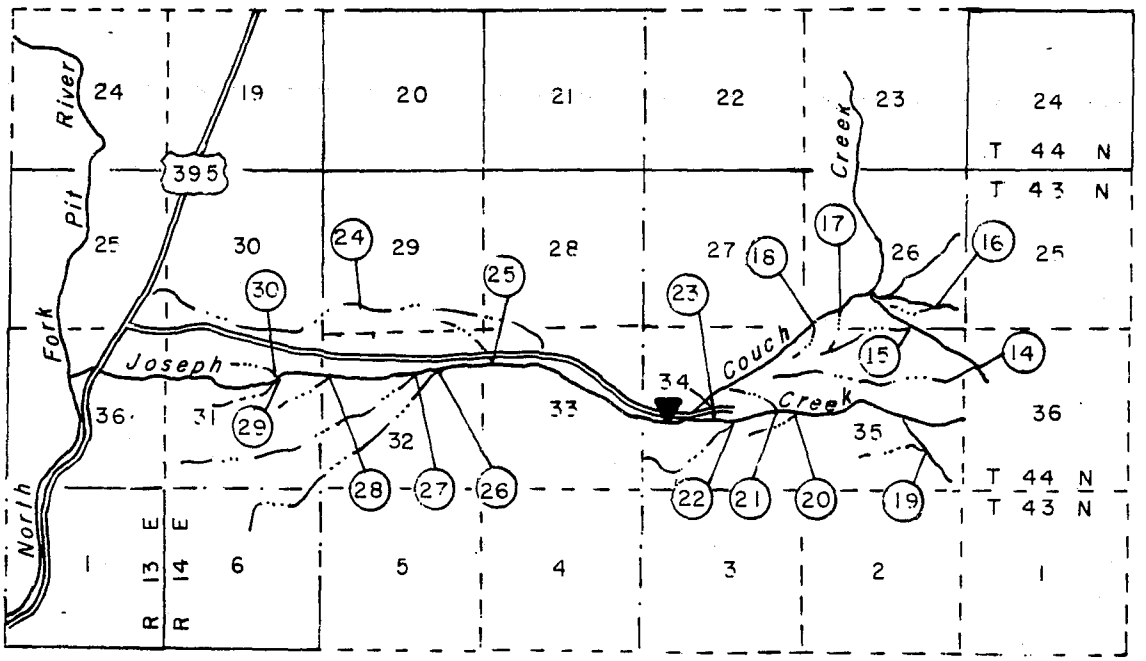
▲ Watermaster installed recorder station

DIVERSIONS FROM FRANKLIN CREEK NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

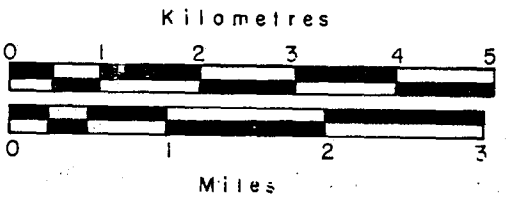
Diversion Number	Name	m^3/s	ft^3/s
14-18	U.S. Forest Service	0.033	1.15[1/]
19	McQueen	0.011	0.40
20-24	Armstrong	0.039	1.38[1/]
22	Russell	0.011	0.40
24	Russell	0.014	0.50
24	Franks	0.003	0.10
26	U.S. Indian Service	0.037	1.30
24-30	Armstrong	0.194	6.85[1/]

1/ Net consumptive use

Figure 15e



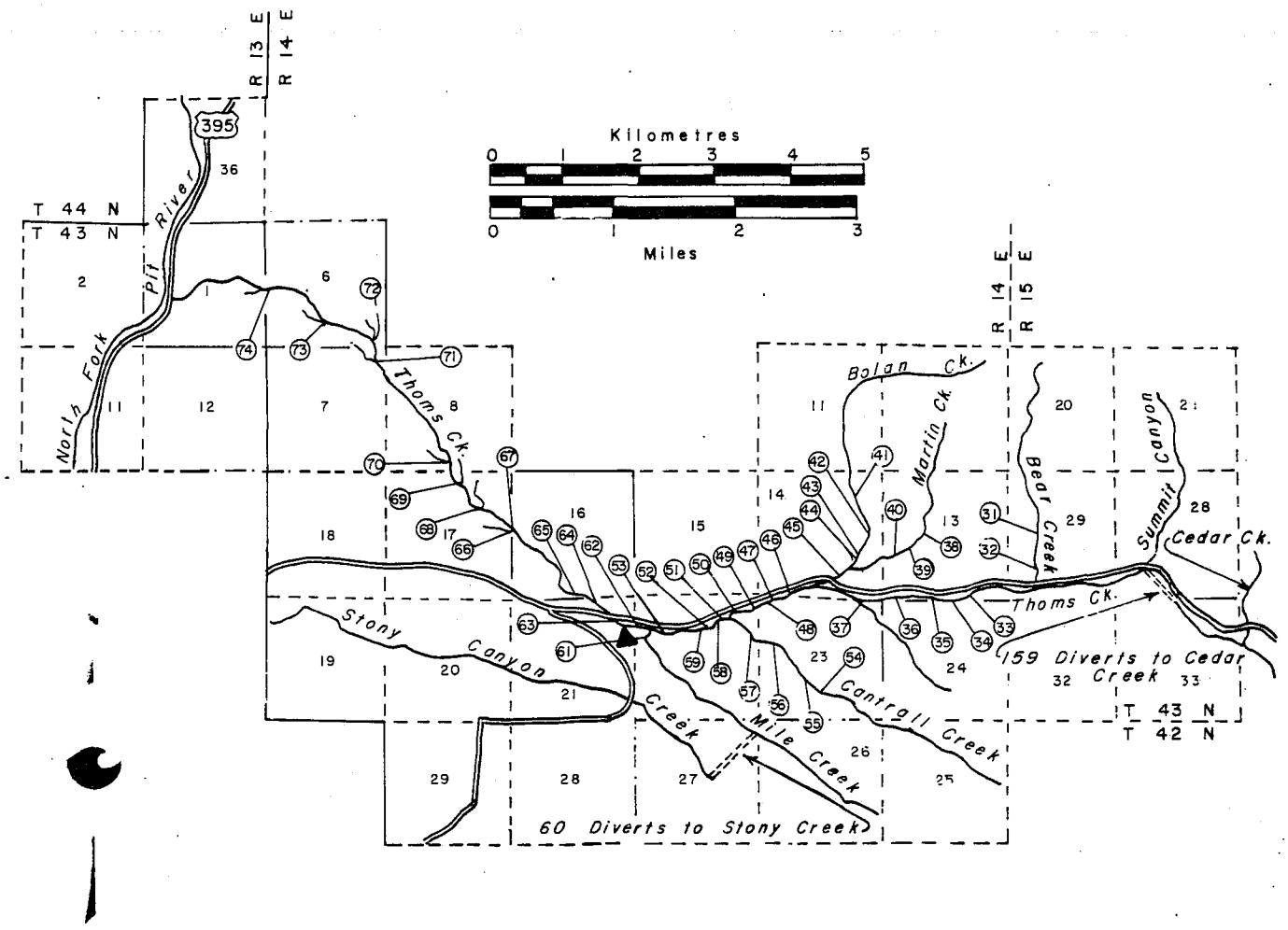
▲ Watermaster installed recorder station



DIVERSIONS FROM JOSEPH CREEK NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
31-36,38-40	Neer	0.0354	1.25
54-56	Coppedge	0.0011	0.04
37	Armor	0.0006	0.02
37,41-45	DeWitt	0.0379	1.34
46-53,57-59, 61	Brown	0.0354	1.25
62-63	Hart	0.0071	0.25
64-65	Thoms Creek Ranch Co.	0.0113	0.40
66-70	Spaulding and Beebe	0.0323	1.14
71-74	Triple K Ranches	0.0212	0.75

Figure 15f

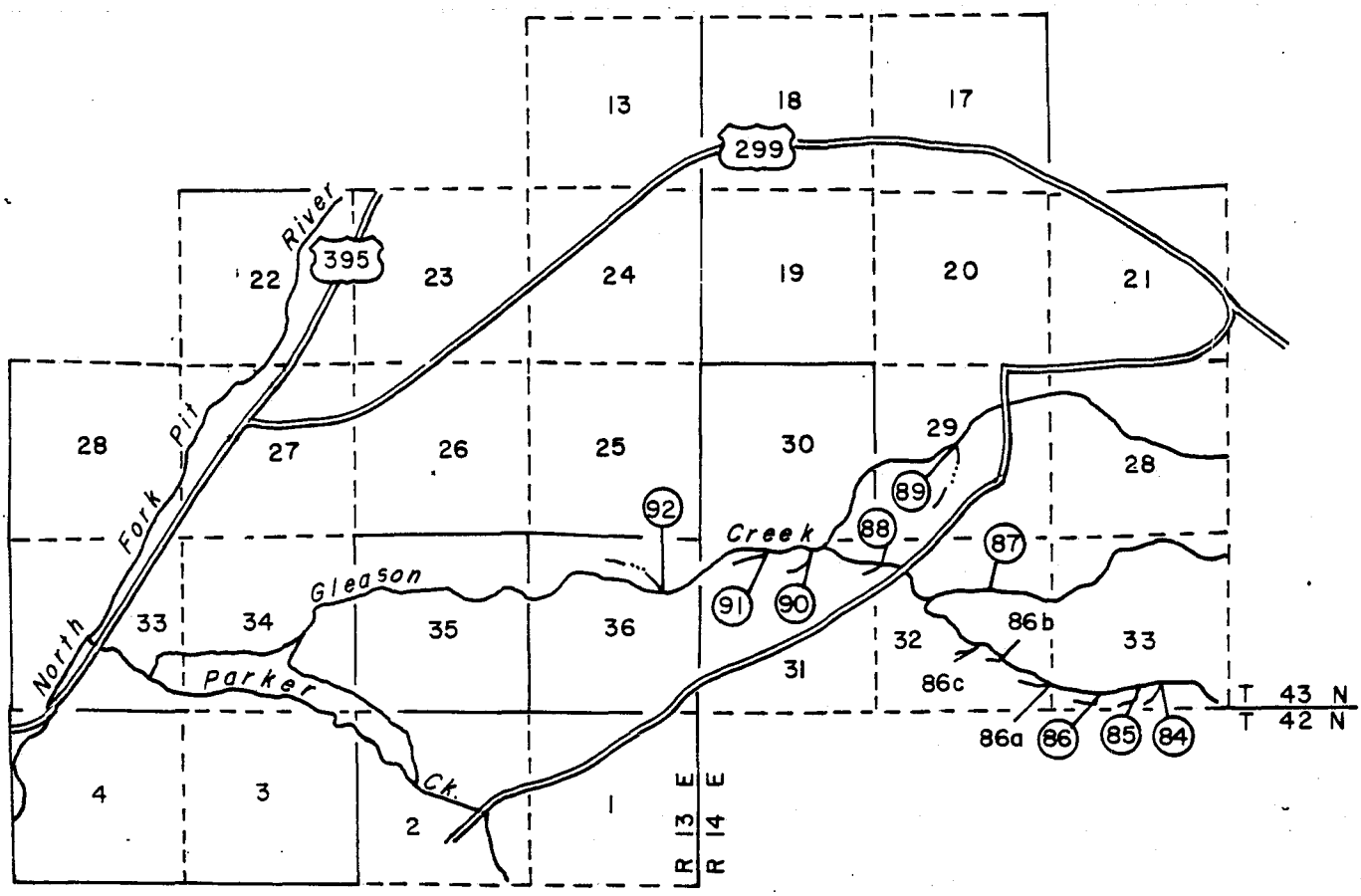


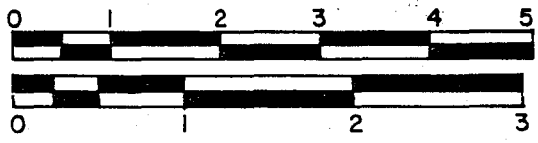
▲ Watermaster installed recorder station

DIVERSIONS FROM THOMS CREEK NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
84-86	Russell	0.028	1.00
86 a,b,c	Stanton	0.006	0.20
87-91	Stains	0.057	2.00
82	U.S. Indian Service	0.038	1.35

Figure 15g





DIVERSIONS FROM GLEASON CREEK NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

Parker Creek

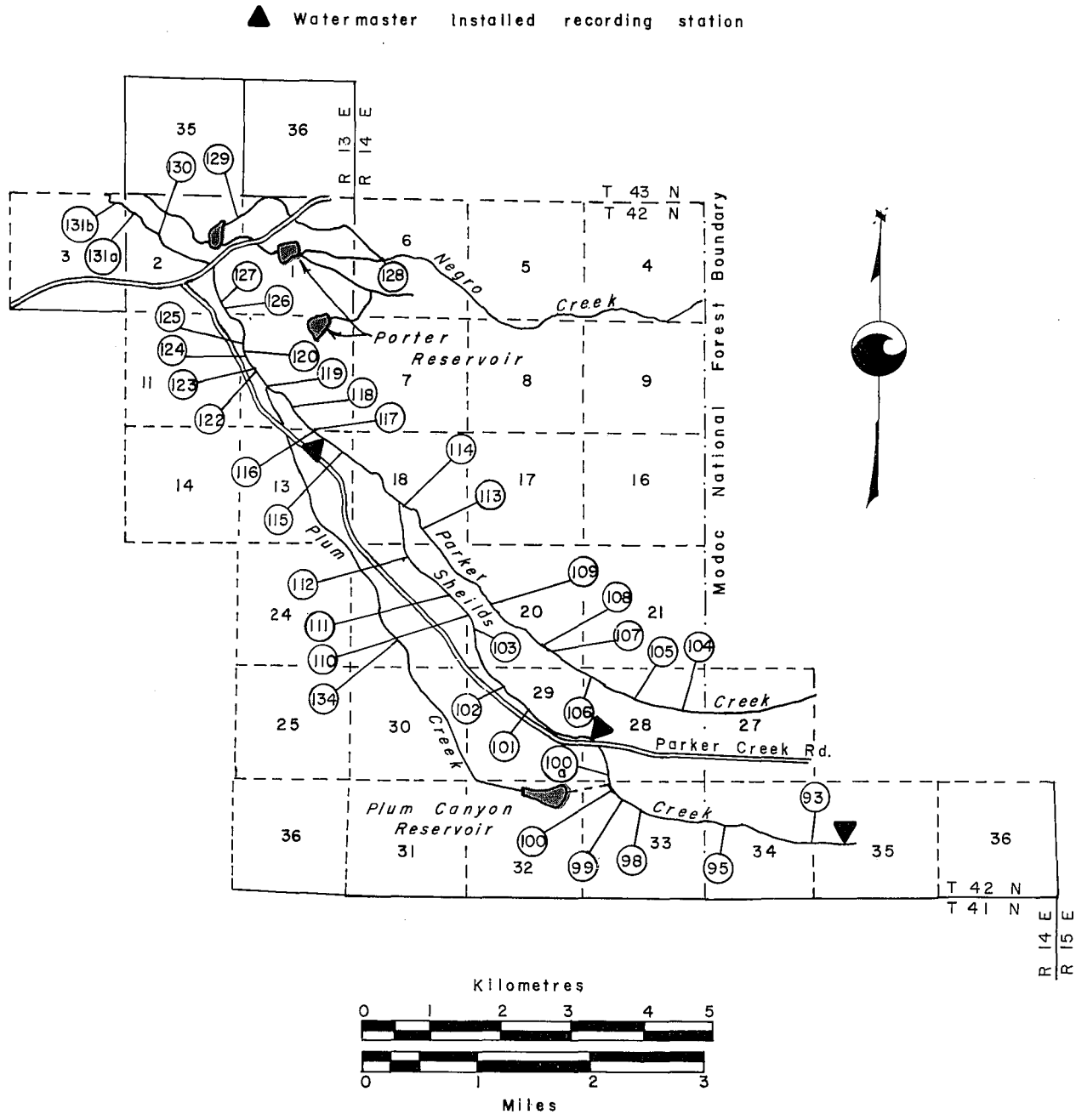
Diversion Number	Name	m^3/s	ft^3/s
104,105,106	G. B. Dorris	0.051	1.80
105,107-109	H. Weber	0.043	1.50
109	R. Hicks	0.006	0.20
113	J. Weber	0.041	1.45
113, or 128	W. Volentine	0.046	1.61
116-118, 120-124	W. Weber	0.062	2.18
120	W. Volentine	0.024	0.83
	J. Monroe	0.014	0.49
126-131	W. Volentine	0.032	1.13
130-131a	U. S. Indian Service	0.084	2.97

Shields Creek

93,95,98-99	J. Weber	0.064	2.25
93,100-100a	R. Bicknell & G. Eagleston	0.020	0.70
101-103,110	H. Weber	0.049	1.70
100	C. Bailey	0.014	0.50*
134	C. Bailey	0.007	0.25*

* May be diverted at three (3) times these rates when water is available.

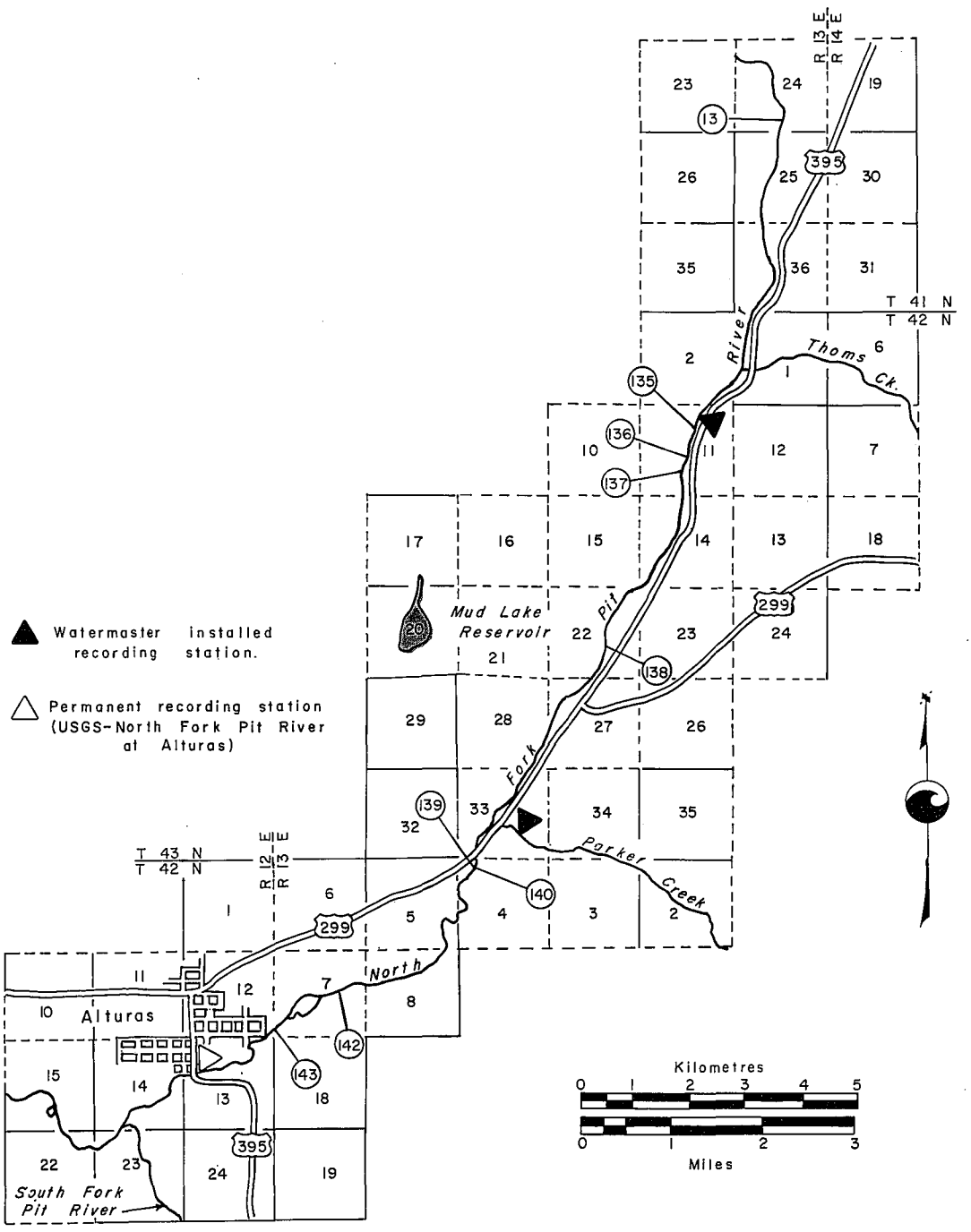
Figure 15h



DIVERSIONS FROM PARKER CREEK AND SHIELDS CREEK
NORTH FORK PIT RIVER
WATERMASTER SERVICE AREA

Diversion Number	Name	$m^3/3$	ft^3/s
13	Quinn	0.010	0.35
135-138	U.S. Indian Service	0.304	10.73
139 or 140	Fitch	0.137	4.84
139	Schluter	0.236	8.35
	Heesch	0.099	3.50
	Tranmal	0.074	2.62
141	Pahl	0.057	2.00
142	Schluter	0.113	4.00
	Baker	0.008	0.30
	Hicks	0.009	0.32
	Moni	0.002	0.08
	Neer	0.004	0.16
143	Asher and Walls	0.041	1.44

Figure 15i



DIVERSIONS FROM NORTH FORK PIT RIVER
NORTH FORK PIT RIVER
WATERMASTER SERVICE AREA

SHACKLEFORD CREEK WATERMASTER SERVICE AREA

The Shackleford Creek service area is located in western Siskiyou County near the town of Fort Jones in Scott Valley. The major sources of water supply for this service area are Shackleford Creek, which flows through the central part of Quartz Valley, and its tributary, Mill Creek, which rises east of the headwaters of Shackleford Creek. Evans Creek, a small tributary to Mill Creek, enters from the south.

The service area encompasses the Quartz Valley region of Scott Valley and includes the entire agricultural area within the Shackleford Creek Basin. It is about 3 km (2 mi) wide by 10 km (6 mi) long with the main axis and drainage running from south to north. Elevations on the agricultural area range from about 950 m (3,100 ft) at the south to about 800 m (2,650 ft) at the confluence of Shackleford Creek and Scott River.

A map of the Shackleford Creek stream system is presented as Figure 16, page 129.

Basis of Service

The Shackleford Creek watermaster service area was created on November 6, 1950. Water is distributed under the provisions of a statutory adjudication which resulted in Decree No. 13775, Siskiyou County Superior Court, dated April 3, 1950.

The allotments are defined in four separate schedules. The Upper Shackleford Creek group and Lower Shackleford Creek group each have seven priority classes, and the Upper Mill Creek group and Lower Mill Creek group each have three priority classes.

Along with these schedules of allotments during the irrigation season, the decree defines two storage rights upstream of all other diversions. This stored water is released late in the irrigation season and commingled with the natural flow of Shackleford Creek for use by the owners.

Water Supply

The water supply for Shackleford Creek is derived from snowmelt runoff, springs and seepage, and supplemental stored water released from Cliff Lake and Campbell Lake. These lakes are located near the headwaters of Shackleford Creek.

The watershed of the Shackleford Creek stream system contains about 80 km^2 (31 mi^2), located in the heavily forested, steep, mountainous terrain of the northeasterly slopes of the Salmon Mountains. It varies in elevation from about 2 100 m (7,000 ft) along its west rim to about 900 m (3,000 ft) at the foot of the slopes bordering Quartz Valley. Snowmelt runoff is normally sufficient to supply all demands until the middle of July. The supply then usually decreases until the first part of August when water is released from Cliff and Campbell Lakes to maintain sufficient flow for second priority allotments in the Shackleford Ditch.

Method of Distribution

Irrigation is accomplished primarily by wild flooding of permanent pasture and alfalfa fields. Water is distributed by ditches and laterals to the places of use. Shackleford Ditch, the largest of these ditches, has a length of about 9 km (6 mi) and a capacity of about 0.3 m^3/s (12 ft^3/s).

1979 Distribution

Watermaster service began April 1 in the Shackleford Creek service area and continued until September 30. Lester L. Lighthall, Water Resources Technician II, was watermaster, except for the period July 3 to September 4 when Kenneth E. Morgan was watermaster.

The available water supply was below normal for the season. Fourth priority water rights were shut off in the middle of July, with third priorities continuing for the remainder of the season.

In the middle of July, the Awender Buffalo and Cattle Ranch started releasing water from Campbell Lake to their Diversion 4, the Shackleford Ditch. The Awender Ranch was leased by Mr. Gillmore this year.

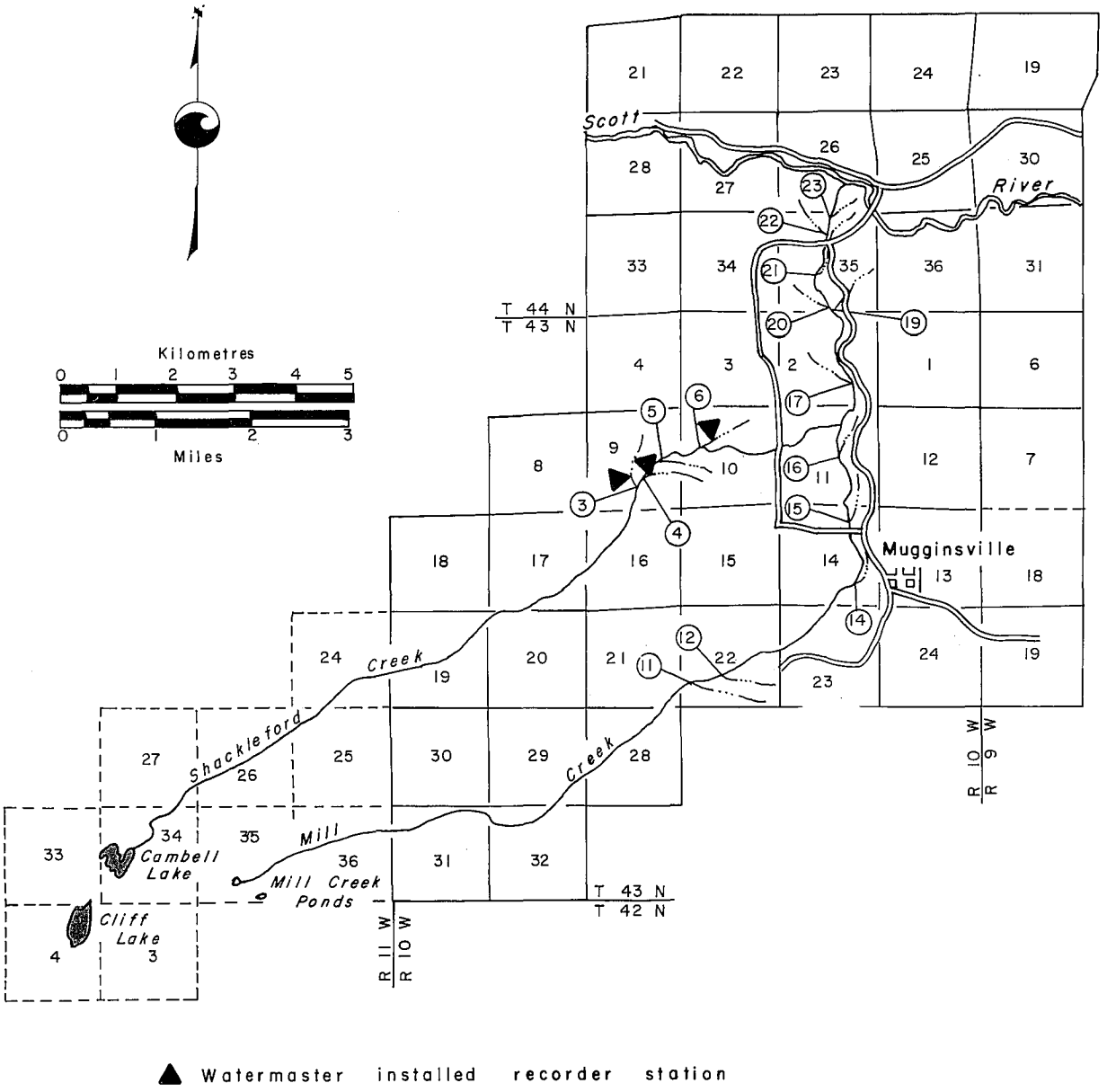
Diversion Number	Name	m^3/s	ft^3/s
3	R. Eastlick Ditch	.099	3.50
4	Shackleford Ditch	.311	11.00
5	Howard-Jones Ditch	.147	5.20
6	Camp Ditch	.142	5.00
11	Eastlick Ditch	.301	10.62
12	Couch Ditch	.018	0.62*
14	China Ditch	.040	1.40
15	Dangel Ditch	.014	0.50
16	Denny Bar Ditch	.014	0.50
17	Freita Ditch	.187	6.60
19	Hammond-Crawford-Lewis Ditch	.102	3.60**
20	Burton-Meamber Ditch	.164	5.80
22	W. Burton	.034	1.20***
23	E. Burton		

* Out of 11 or 12

** Plus rights not in service area

*** In either 22 or 23

Figure 16



DIVERSIONS FROM SHACKLEFORD CREEK AND MILL CREEK SHACKLEFORD CREEK WATERMASTER SERVICE AREA

SHASTA RIVER WATERMASTER SERVICE AREA

The Shasta River service area is situated in the central part of Siskiyou County, south and east of the town of Yreka.

The source of water supply is Shasta River and its several tributaries. The upper reaches of the service area are served by two groups of tributaries. One group, comprising Boles, Beaughan, Carrick, and Jackson Creeks, rises on the northwestern slopes of Mount Shasta. The other group, consisting of Dale and Eddy Creeks, and Shasta River west of U. S. Highway 99, rises on the eastern slopes of the Trinity Mountains. All these streams join the main stem Shasta River above Dwinnell Reservoir near the town of Weed. As the Shasta River flows northward from Dwinnell Reservoir to its confluence with the Klamath River, north of Yreka, it is joined by three major tributaries. Parks Creek, rising on the eastern slopes of the Trinity Mountains, enters from the west near the town of Gazelle. Big Springs Creek, from Big Springs Lake, enters from the east about a mile below Parks Creek. Little Shasta River, rising on the western slopes of the mountainous area between Butte Valley and Shasta Valley, enters from the east near the town of Montague.

The place of use is in Shasta Valley which is approximately 48 km (30 mi) long and 48 km (30 mi) wide. The valley has numerous small, cone-shaped, volcanic hillocks scattered throughout its central portion that produce the effect of dividing the area into a number of distinctively separate parts. Because of these formations, only about 47 000 ha (141,000 ac) of the approximately 205 000 ha (507,000 ac) within the valley are irrigable. The valley floor elevation averages approximately 900 m (3,000 ft).

Maps of the major stream systems in the Shasta River service area are presented as Figures 17 through 17g, pages 137 through 151.

Basis of Service

The Shasta River watermaster service area was created on March 1, 1933. The appropriative water rights on this stream system were determined by a statutory adjudication which resulted in Decree No. 7035, Siskiyou County Superior Court, dated December 29, 1932.

The decree describes the water rights of the entire stream system in alphabetical order of users. The rights supervised by the watermaster are broken down into eight separate schedules. These are: Shasta River above its confluence with Big Springs Creek, 43 priorities; Boles Creek, 20 priorities; Beaughan Creek, 5 priorities; Jackson Creek, 7 priorities; Carrick Creek, 13 priorities; Parks Creek, 25 priorities; Shasta River below its confluence with Big Springs Creek and Big Springs Creek and tributaries, 29 priorities; and Little Shasta River, 7 priorities. Additional schedules include Willow Creek, Yreka Creek, and miscellaneous independent springs, gulches, and sloughs, but these are not included in the service area.

Montague Water Conservation District has appropriative rights for storage of Shasta River and Parks Creek water in Dwinnell Reservoir (Lake Shastina). By agreement with the District, five nearby downstream users receive water from storage in lieu of their decreed continuous flow allotments. The watermaster handles the reservoir releases for these users as well as for the district itself.

A peculiarity of the Shasta River decree is that it defines only appropriative rights and excludes a number of riparian users on the lower Shasta River. Owners of these rights are not subject to watermaster supervision, causing considerable distribution problems during seasons of short water supply.

Water Supply

The water supply for Shasta Valley is derived from snowmelt runoff, springs and underground flow, and occasional summer thundershowers. In several portions of the stream system, the springs from underground flow are adequate to supply most allotments throughout the season. Much of the underground flow is derived from the northern slopes of Mount Shasta, which rises to an elevation of 4 317 m (14,162 ft) at the south end of Shasta Valley. Although the snowpack on Mount Shasta is usually heavy, there is negligible surface runoff.

Parks Creek, Upper Shasta River, and Little Shasta River derive a major portion of their water supply from snowmelt runoff. This flow is usually adequate to supply allotments until the middle of May.

Beaughan Creek, Carrick Creek, Shasta River from Boles Creek to Dwinnell Reservoir, Big Springs, and Lower Shasta River have enough runoff from springs to supply a large percentage of the allotments throughout the season.

Records of the daily mean discharge at several stream gaging stations in the Shasta River service area are presented in Tables 32, 33, 35, and 36, pages 134 through 136. The daily mean storage in Dwinnell Reservoir is presented in Table 34, page 135.

Method of Distribution

Irrigation of permanent pasture and alfalfa lands is accomplished principally by wild flooding. Much of the return water is recaptured and used on lower pasture lands. Sprinkling systems are used for irrigating some alfalfa and grain lands.

Water is derived primarily by diversion dams and then conveyed by ditch or canal to the place of use. The largest and longest canal in the area is the Edson-Foulke Yreka Ditch, which has a capacity of about 1.70 m^3/s (60 ft^3/s) and a length of about 22 km (14 mi). Water is also supplied into ditch systems by pumped diversions, the three largest belonging to two irrigation districts and a private water users association. Some riparian lands are also served by pump diversions.

Many privately owned storage reservoirs exist in the area. Water storage from these reservoirs is used to supplement continuous-flow allotments.

Because of their large rights, close surveillance of the two public agencies, Grenada and Big Springs Irrigation Districts, and the privately operated Shasta River Water Users Association, is very important, particularly in dry years. Control of releases from Montague Water Conservation District's Dwinnell Reservoir (Lake Shastina) is another responsibility of the watermaster. This includes measurement of deliveries of stored water to users just below the dam.

1979 Distribution

Lester L. Lighthall, Water Resources Technician II, was watermaster in the Shasta River service area from March 15 through October 15.

The available water supply in the service area was below average during the season.

Parks Creek. The flow in Parks Creek was sufficient to supply all priorities including some water going to Montague Water Conservation District Bypass Canal to the Shasta River until June 15, diminishing until the first priority allotments of 0.17 m^3/s (6 ft^3/s) were at 70 percent by the middle of July and remained that for the rest of the season.

Water users downstream from the lowest first priority diversion receive a portion of their allotments during the latter part of the season from return flow and from water rising in the streambed.

Upper Shasta River. The flow in the Shasta River was sufficient to fill all eight priorities until the middle of June. By the end of June, the river was down to fourth priorities and all of the water was turned into the Yreka Ditch at that point. Then the river declined until the Yreka Ditch was only receiving 25 percent of their rights and remained that way for the remainder of the season.

Lower priority users are able to receive only a portion of their rights below the Yreka Ditch from return flow and channel increase.

Shasta River from Boles Creek to Dwinnell Reservoir. Boles Creek and this portion of the Shasta River were operated as one stream, under a long-standing oral agreement among the water right owners. The water is distributed on a correlative, equal-priority basis. By the first of June, all water rights were reduced to 80 percent of their allotments.

Beaughan Creek. The flow of Beaughan Creek was sufficient to satisfy all demands (five priorities) for the entire season.

Carrick Creek. The water supply in Carrick Creek was adequate to satisfy all allotments (13 priorities) during the entire irrigation season.

Little Shasta River. There was enough water available in Little Shasta River to satisfy five priority allotments (seven priorities in all) until the first of June, at which time full regulation became necessary to adequately distribute this priority. The flow continued to decrease to 30 percent of fifth priority allotments by the first of July. It then stayed constant for the remainder of the season.

Dwinnell Reservoir. Releases from Dwinnell Reservoir to the Montague Water Conservation District commenced on March 21 and continued into October.

By agreement with the Montague Water Conservation District, water users on Shasta River below Dwinnell Reservoir received stored water from the reservoir on demand in lieu of their natural flow rights. The agreement allotment totals and the amount delivered to each user this season are shown in the tabulation on the following page.

Big Springs. The flow of Big Springs was sufficient to satisfy all of the demands from Big Springs Lake through the first half of the season. Then, by the middle of June it became necessary to regulate Big Springs Irrigation District's pumps. The springs continued to decline until the middle of July when the springs were at their lowest. By the last of August, the springs had recovered some and Big Springs Irrigation District was able to run both pumps 0.5 m^3/s (18 ft^3/s) when the Brah's pump was off.

Lower Shasta River. The water supply in the lower Shasta River was sufficient to satisfy all allotments (29 priorities) until June 26 when all diversions from the Shasta River were set at 100 percent of their allotments and the riparian users were set at a reasonable amount. The the Grenada Irrigation District was cut back as necessary to fill these requirements.

DELIVERIES TO NATURAL FLOW WATER RIGHT
OWNERS BELOW DWINNELL RESERVOIR - 1979

Name of Water Right Owner	Allotment in hm^3	Allotment in ac-ft	Allotment Delivered from Dwinnell Reservoir hm^3	Allotment Delivered from Dwinnell Reservoir ac-ft	Percent of Allotment
Seldom Seen Ranch and Hole-in-the-Ground Ranch (D. Gragnani)	1.88	1,520	1.88	1,520	100
Ross Park Homes, Inc.	.57	464	.57	464	100
Taylor Ranch (J. N. Taylor)	1.48	1,200	1.48	1,200	100
Shastina Equestrian Center (Twelve Weed, Inc.)	.08	66	.08	66	100
Flying "L" Ranch	.16	132	.16	132	100
Totals	4.17	3,382	4.17	3,382	

SHASTA RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 32

SHASTA RIVER NEAR YREKA

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1	6.967	246.0	4.644	164.0	6.372	225.0	1.699	60.0	0.481	17.0	0.510	18.0	2.605	92.0	1
2	6.797	240.0	4.390	155.0	5.947	210.0	1.416	50.0	0.651	23.0	0.396	14.0	2.464	87.0	2
3	6.570	232.0	4.220	149.0	4.418	156.0	1.303	46.0	0.623	22.0	0.312	11.0	2.690	95.0	3
4	6.514	230.0	3.738	132.0	3.682	130.0	1.161	41.0	0.651	23.0	0.224	7.9	2.690	95.0	4
5	6.230	220.0	3.597	127.0	4.276	151.0	1.218	43.0	0.510	18.0	0.396	14.0	2.407	85.0	5
6	6.145	217.0	2.945	104.0	7.986	282.0	1.303	46.0	0.566	20.0	0.368	13.0	1.869	66.0	6
7	6.117	216.0	2.832	100.0	7.986	282.0	1.189	42.0	0.821	29.0	0.566	20.0	1.558	55.0	7
8	6.117	216.0	3.313	117.0	7.561	267.0	1.048	37.0	0.906	32.0	0.481	17.0	1.614	57.0	8
9	6.145	217.0	3.257	115.0	7.137	252.0	0.906	32.0	0.906	32.0	0.425	15.0	1.699	60.0	9
10	5.976	211.0	3.512	124.0	7.052	249.0	0.906	32.0	0.878	31.0	0.566	20.0	1.444	51.0	10
11	5.862	207.0	4.135	146.0	6.372	225.0	0.878	31.0	0.821	29.0	0.481	17.0	1.388	49.0	11
12	5.692	201.0	3.965	140.0	5.409	191.0	0.821	29.0	0.708	25.0	0.368	13.0	1.473	52.0	12
13	5.749	203.0	3.710	131.0	4.446	157.0	0.736	26.0	0.566	20.0	0.235	8.3	1.728	61.0	13
14	5.579	197.0	3.455	122.0	3.568	126.0	0.821	29.0	0.623	22.0	0.252	8.9	1.756	62.0	14
15	5.126	181.0	3.228	114.0	3.313	117.0	0.793	28.0	0.793	28.0	0.425	15.0	1.728	61.0	15
16	5.296	187.0	3.144	111.0	3.059	108.0	0.765	27.0	0.481	17.0	0.538	19.0	1.784	63.0	16
17	6.457	228.0	3.710	131.0	2.690	95.0	0.991	35.0	0.396	14.0	0.623	22.0	1.671	59.0	17
18	6.910	244.0	4.333	153.0	2.067	73.0	1.189	42.0	0.340	12.0	0.595	21.0	1.586	56.0	18
19	6.514	230.0	5.013	177.0	1.756	62.0	1.218	43.0	0.312	11.0	0.991	35.0	1.671	59.0	19
20	6.117	216.0	4.644	164.0	1.728	61.0	0.935	33.0	0.425	15.0	1.954	69.0	1.869	66.0	20
21	5.664	200.0	4.475	158.0	1.699	60.0	0.878	31.0	0.821	29.0	2.124	75.0	1.699	60.0	21
22	5.579	197.0	4.616	163.0	1.671	59.0	0.708	25.0	0.510	18.0	1.897	67.0	1.728	61.0	22
23	4.644	164.0	4.333	153.0	1.784	63.0	0.566	20.0	0.510	18.0	1.048	37.0	1.643	58.0	23
24	4.050	143.0	3.965	140.0	2.436	86.0	0.425	15.0	0.538	19.0	0.736	26.0	1.501	53.0	24
25	3.965	140.0	3.767	133.0	2.266	80.0	0.340	12.0	0.708	25.0	0.765	27.0	1.926	68.0	25
26	4.220	149.0	3.597	127.0	1.954	69.0	0.312	11.0	0.510	18.0	0.765	27.0	2.124	75.0	26
27	4.248	150.0	3.228	114.0	1.897	67.0	0.538	19.0	0.481	17.0	0.906	32.0	2.464	87.0	27
28	6.060	214.0	3.030	107.0	1.756	62.0	0.708	25.0	0.312	11.0	0.736	26.0	2.549	90.0	28
29	10.139	358.0	2.860	101.0	1.812	64.0	0.566	20.0	0.566	20.0	0.935	33.0	3.285	116.0	29
30	7.760	274.0	3.540	125.0	1.586	56.0	0.425	15.0	0.906	32.0	3.512	124.0	3.370	119.0	30
31	5.466	193.0			1.529	54.0			0.765	27.0	2.945	104.0			31
MEAN	5.957	210.4	3.773	133.2	3.781	133.5	0.892	31.5	0.616	21.7	0.873	30.8	1.999	70.6	MEAN
DAM^3	15945.		9773.		10121.		2311.		1648.		2338.		5179.		DAM^3
AC-FT		12927.		7923.		8205.		1873.		1336.		1895.		4199.	AC-FT

SHASTA RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 33

SHASTA RIVER NEAR EDGEWOOD

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			1.982	70.0	2.322	82.0	1.133	40.0	0.368	13.0	0.221	7.8	0.312	11.0	1
2			1.643	58.0	1.869	66.0	1.104	39.0	0.340	12.0	0.210	7.4	0.340	12.0	2
3			1.331	47.0	2.039	72.0	1.133	40.0	0.368	13.0	0.198	7.0	0.283	10.0	3
4			1.331	47.0	2.690	95.0	1.076	38.0	0.340	12.0	0.201	7.1	0.312	11.0	4
5			1.643	58.0	6.259	221.0	1.104	39.0	0.340	12.0	0.184	6.5	0.283	10.0	5
6			2.124	75.0	4.418	156.0	1.218	43.0	0.312	11.0	0.176	6.2	0.278	9.8	6
7			1.812	64.0	3.710	131.0	1.076	38.0	0.235	8.3	0.184	6.5	0.249	8.8	7
8			1.614	57.0	3.313	117.0	0.906	32.0	0.232	8.2	0.190	6.7	0.207	7.3	8
9			1.416	50.0	2.860	101.0	0.821	29.0	0.227	8.0	0.170	6.0	0.232	8.2	9
10			1.303	46.0	2.209	78.0	0.765	27.0	0.204	7.2	0.164	5.8	0.278	9.8	10
11			1.246	44.0	1.982	70.0	0.736	26.0	0.164	5.8	0.161	5.7	0.263	9.3	11
12			1.104	39.0	2.067	73.0	0.736	26.0	0.167	5.9	0.161	5.7	0.241	8.5	12
13			1.161	41.0	2.436	86.0	0.651	23.0	0.193	6.8	0.198	7.0	0.258	9.1	13
14			1.161	41.0	3.228	114.0	0.651	23.0	0.207	7.3	0.218	7.7	0.283	10.0	14
15			1.161	41.0	4.078	144.0	0.595	21.0	0.193	6.8	0.215	7.6	0.263	9.3	15
16			1.784	63.0	4.361	154.0	0.538	19.0	0.181	6.4	0.198	7.0	0.235	8.3	16
17			1.728	61.0	4.163	147.0	0.481	17.0	0.176	6.2	0.204	7.2	0.244	8.6	17
18			1.756	62.0	4.135	146.0	0.510	18.0	0.181	6.4	0.190	6.7	0.195	6.9	18
19			1.444	51.0	4.050	143.0	0.481	17.0	0.187	6.6	0.204	7.2	0.161	5.7	19
20			1.274	45.0	4.106	145.0	0.425	15.0	0.198	7.0	0.283	10.0	0.173	6.1	20
21			1.218	43.0	4.361	154.0	0.538	19.0	0.221	7.8	0.207	7.3	0.167	5.9	21
22			1.359	48.0	4.390	155.0	0.510	18.0	0.238	8.4	0.176	6.2	0.187	6.6	22
23			1.416	50.0	4.106	145.0	0.481	17.0	0.210	7.4	0.187	6.6	0.212	7.5	23
24			1.359	48.0	3.710	131.0	0.481	17.0	0.212	7.5	0.198	7.0	0.215	7.6	24
25			1.246	44.0	3.200	113.0	0.481	17.0	0.190	6.7	0.212	7.5	0.283	10.0	25
26			1.444	51.0	2.974	105.0	0.453	16.0	0.207	7.3	0.235	8.3	0.312	11.0	26
27			2.067	73.0	2.690	95.0	0.425	15.0	0.198	7.0	0.269	9.5	0.312	11.0	27
28			1.869	66.0	2.237	79.0	0.396	14.0	0.198	7.0	0.283	10.0	0.312	11.0	28
29			1.812	64.0	1.728	61.0	0.368	13.0	0.212	7.5	0.425	15.0	0.340	12.0	29
30			1.897	67.0	1.444	51.0	0.368	13.0	0.210	7.4	0.453	16.0	0.340	12.0	30
31					1.274	45.0			0.232	8.2	0.340	12.0			31
MEAN			1.524	53.8	3.175	112.1	0.688	24.3	0.230	8.1	0.223	7.9	0.259	9.1	MEAN
DAM^3			3947.		8497.		1783.		616.		597.		671.		DAM^3
AC-FT				3199.		6888.		1445.		500.		484.		544.	AC-FT

SHASTA RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 34

PARKS CREEK ABOVE EDSON-FOULKE YREKA DITCH

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.453	16.0	1.756	62.0	0.736	26.0	0.167	5.9	0.040	1.4	0.057	2.0	1
2			0.481	17.0	1.756	62.0	0.680	24.0	0.167	5.9	0.040	1.4	0.102	3.6	2
3			0.510	18.0	2.039	72.0	0.680	24.0	0.173	6.1	0.040	1.4	0.079	2.8	3
4			0.566	20.0	2.520	89.0	0.680	24.0	0.173	6.1	0.040	1.4	0.079	2.8	4
5			0.793	28.0	3.398	120.0	0.651	23.0	0.161	5.7	0.034	1.2	0.074	2.6	5
6			1.076	38.0	2.294	81.0	0.623	22.0	0.139	4.9	0.034	1.2	0.059	2.1	6
7			0.935	33.0	1.869	66.0	0.595	21.0	0.125	4.4	0.034	1.2	0.031	1.1	7
8			0.935	33.0	1.529	54.0	0.340	12.0	0.122	4.3	0.034	1.2	0.034	1.2	8
9			0.906	32.0	1.359	48.0	0.453	16.0	0.110	3.9	0.034	1.2	0.042	1.5	9
10			0.793	28.0	1.218	43.0	0.425	15.0	0.093	3.3	0.034	1.2	0.042	1.5	10
11			0.680	24.0	1.359	48.0	0.368	13.0	0.102	3.6	0.034	1.2	0.042	1.5	11
12			0.651	23.0	1.643	58.0	0.312	11.0	0.102	3.6	0.034	1.2	0.042	1.5	12
13			0.708	25.0	1.954	69.0	0.312	11.0	0.096	3.4	0.034	1.2	0.042	1.5	13
14			0.765	27.0	2.379	84.0	0.312	11.0	0.093	3.3	0.034	1.2	0.040	1.4	14
15			0.793	28.0	2.577	91.0	0.312	11.0	0.091	3.2	0.034	1.2	0.040	1.4	15
16			1.048	37.0	2.549	90.0	0.312	11.0	0.082	2.9	0.031	1.1	0.040	1.4	16
17			0.935	33.0	2.379	84.0	0.340	12.0	0.082	2.9	0.028	1.0	0.040	1.4	17
18			0.793	28.0	2.322	82.0	0.368	13.0	0.065	2.3	0.028	1.0	0.034	1.2	18
19			0.708	25.0	2.322	82.0	0.340	12.0	0.062	2.2	0.034	1.2	0.034	1.2	19
20			0.680	24.0	2.322	82.0	0.283	10.0	0.057	2.0	0.042	1.5	0.034	1.2	20
21			0.708	25.0	2.351	83.0	0.272	9.6	0.045	1.6	0.040	1.4	0.034	1.2	21
22			0.793	28.0	2.322	82.0	0.249	8.8	0.048	1.7	0.040	1.4	0.034	1.2	22
23			0.793	28.0	2.152	76.0	0.229	8.1	0.045	1.6	0.040	1.4	0.034	1.2	23
24			0.793	28.0	1.954	69.0	0.207	7.3	0.042	1.5	0.040	1.4	0.034	1.2	24
25			0.793	28.0	1.728	61.0	0.190	6.7	0.040	1.4	0.040	1.4	0.042	1.5	25
26			0.963	34.0	1.643	58.0	0.181	6.4	0.042	1.5	0.040	1.4	0.045	1.6	26
27			1.218	43.0	1.473	52.0	0.173	6.1	0.045	1.6	0.040	1.4	0.045	1.6	27
28			1.274	45.0	1.274	45.0	0.167	5.9	0.045	1.6	0.040	1.4	0.045	1.6	28
29			1.274	45.0	1.104	39.0	0.167	5.9	0.045	1.6	0.045	1.6	0.048	1.7	29
30			1.529	54.0	0.935	33.0	0.167	5.9	0.045	1.6	0.065	2.3	0.048	1.7	30
31					0.821	29.0			0.042	1.5	0.040	1.4			31
MEAN			0.845	29.8	1.913	67.5	0.371	13.1	0.089	3.1	0.038	1.3	0.047	1.6	MEAN
DAM^3			2188.		5120.		960.		237.		100.		121.		DAM^3
AC-FT				1774.		4151.		778.		192.		81.		98.	AC-FT

SHASTA RIVER WATERMASTER SERVICE AREA
Water Year 1979

TABLE 35
DAILY MEAN STORAGE IN LAKE SHASTINA (DWINELL RESERVOIR)

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Day
1	24,575	22,410	22,690	23,915	27,080	30,704	35,809	35,248	34,942	26,795	18,896	13,519	1
2	24,485	22,382	22,732	23,960	27,125	30,800	35,843	35,248	34,670	26,525	18,644	13,475	2
3	24,365	22,368	22,760	23,990	27,155	30,880	35,843	35,231	34,415	26,300	18,350	13,398	3
4	24,260	22,368	22,802	24,050	27,200	30,960	35,792	35,265	34,296	26,000	18,070	13,354	4
5	24,170	22,354	22,872	24,080	27,245	31,040	35,758	35,401	33,939	25,700	17,792	13,288	5
6	24,050	22,340	22,928	24,110	27,290	31,120	35,775	35,775	33,535	25,370	17,532	13,244	6
7	23,975	22,340	22,970	24,140	27,350	31,232	35,809	35,940	33,327	25,020	17,277	13,178	7
8	23,900	22,340	22,998	24,230	27,455	31,328	35,775	36,115	33,106	24,800	17,052	13,112	8
9	23,825	22,340	23,040	24,320	27,500	31,424	35,758	36,251	32,716	24,575	16,869	13,035	9
10	23,750	22,298	23,082	24,590	27,545	31,504	35,690	36,285	32,480	24,200	16,640	12,958	10
11	23,675	22,270	23,124	25,250	27,575	31,600	35,690	36,285	32,182	23,900	16,448	12,870	11
12	23,572	22,270	23,208	25,595	27,800	31,680	35,639	36,285	31,920	23,675	16,244	12,782	12
13	23,488	22,270	23,250	25,795	28,355	31,776	35,571	36,302	31,600	23,418	16,076	12,694	13
14	23,404	22,270	23,292	25,925	28,955	31,920	35,520	36,319	31,292	23,152	15,896	12,606	14
15	23,348	22,270	23,334	26,120	29,225	32,048	35,486	36,370	30,988	22,900	15,695	12,507	15
16	23,292	22,270	23,362	26,225	29,375	32,240	35,469	36,438	30,828	22,578	15,500	12,397	16
17	23,236	22,270	23,390	26,330	29,450	32,400	35,503	36,489	30,508	22,396	15,260	12,276	17
18	23,166	22,312	23,446	26,405	29,495	32,512	35,537	36,489	30,256	22,200	14,960	12,166	18
19	23,096	22,340	23,474	26,450	29,680	32,608	35,537	36,506	30,012	22,004	14,876	12,010	19
20	23,040	22,354	23,502	26,525	29,792	32,688	35,503	36,523	29,792	21,752	14,744	11,920	20
21	22,970	22,396	23,530	26,600	29,888	32,720	35,452	36,506	29,520	21,570	14,624	11,820	21
22	22,900	22,424	23,572	26,675	30,005	32,768	35,418	36,540	29,345	21,360	14,426	11,700	22
23	22,830	22,452	23,600	26,720	30,080	32,800	35,367	36,472	29,120	21,150	14,201	11,580	23
24	22,760	22,480	23,660	26,750	30,160	32,834	35,333	36,506	28,850	20,940	14,080	11,460	24
25	22,690	22,494	23,705	26,825	30,240	32,868	35,282	36,404	28,580	20,660	13,992	11,360	25
26	22,648	22,522	23,750	26,855	30,320	32,902	35,214	36,234	28,295	20,450	13,882	11,260	26
27	22,606	22,536	23,780	26,900	30,400	33,565	35,180	36,064	27,950	20,198	13,794	11,200	27
28	22,564	22,550	23,825	26,945	30,512	34,976	35,180	35,894	27,650	19,960	13,706	11,150	28
29	22,522	22,606	23,855	26,975	—	35,384	35,180	35,690	27,350	19,736	13,640	11,100	29
30	22,466	22,662	23,870	27,005	—	35,571	35,214	35,452	27,050	19,470	13,596	11,060	30
31	22,424	—	23,900	27,050	—	35,724	—	35,197	—	19,218	13,563	—	31

Conversion Factor - 1 ac-ft = 1.2335 dam^3

SHASTA RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

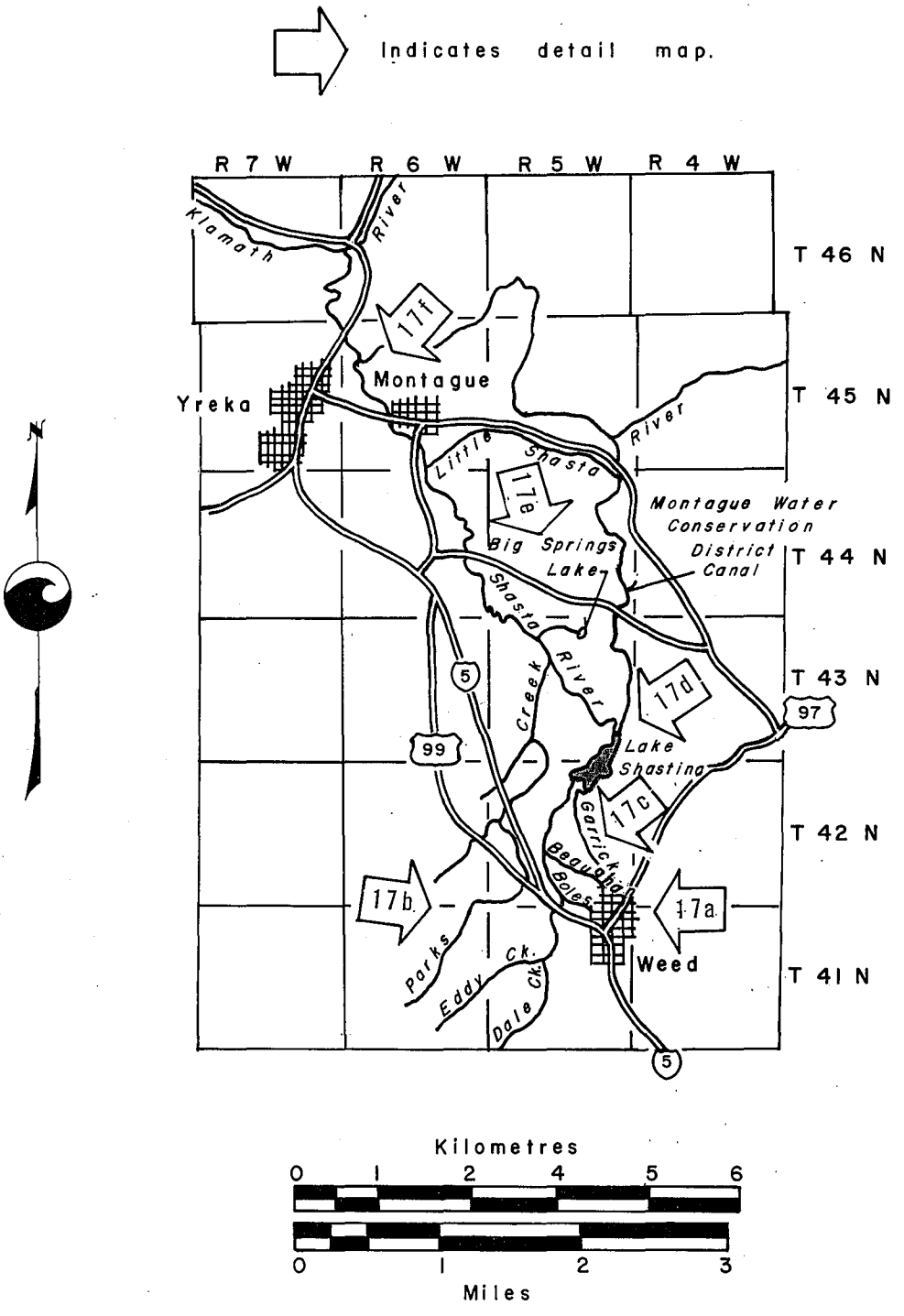
TABLE 36

SHASTA RIVER AT MONTAGUE-GRENADA HIGHWAY BRIDGE

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1									0.481	17.0	0.212	7.5			1
2									0.595	21.0	0.258	9.1			2
3									0.368	13.0	0.340	12.0			3
4									0.340	12.0	0.566	20.0			4
5									0.368	13.0	0.680	24.0			5
6									0.623	22.0	0.736	26.0			6
7									0.623	22.0	0.566	20.0			7
8									0.765	27.0	0.566	20.0			8
9									0.595	21.0	0.765	27.0			9
10									0.396	14.0	0.340	12.0			10
11									0.651	23.0	0.187	6.6			11
12									0.255	9.0	0.187	6.6			12
13									0.261	9.2	0.156	5.5			13
14									0.680	24.0	0.481	17.0			14
15									0.312	11.0	0.481	17.0			15
16									0.368	13.0	0.623	22.0			16
17									0.340	12.0	0.680	24.0			17
18							1.048	37.0*	0.396	14.0	0.935	33.0			18
19							0.850	30.0	0.453	16.0	1.076	38.0			19
20							0.736	26.0	0.566	20.0	1.756	62.0			20
21							0.566	20.0	0.566	20.0	1.926	68.0			21
22							0.425	15.0	0.566	20.0	1.274	45.0			22
23							0.187	6.6	0.680	24.0	0.481	17.0			23
24							0.144	5.1	0.651	23.0	0.566	20.0			24
25							0.133	4.7	0.623	22.0	0.312	11.0			25
26							0.481	17.0	0.481	17.0	0.566	20.0			26
27							0.708	25.0	0.481	17.0	0.425	15.0			27
28							0.538	19.0	0.736	26.0	0.312	11.0			28
29							0.261	9.2	0.821	29.0	1.133	40.0			29
30							0.510	18.0	1.020	36.0	2.690	95.0			30
31									0.275	9.7	1.982	70.0**			31
MEAN							0.220	7.8	0.527	18.6	0.750	26.5			MEAN
DAM^3							569.		1411.		2008.				DAM^3
AC-FT								461.		1144.		1628.			AC-FT

* Beginning of record
** End of record

Figure 17

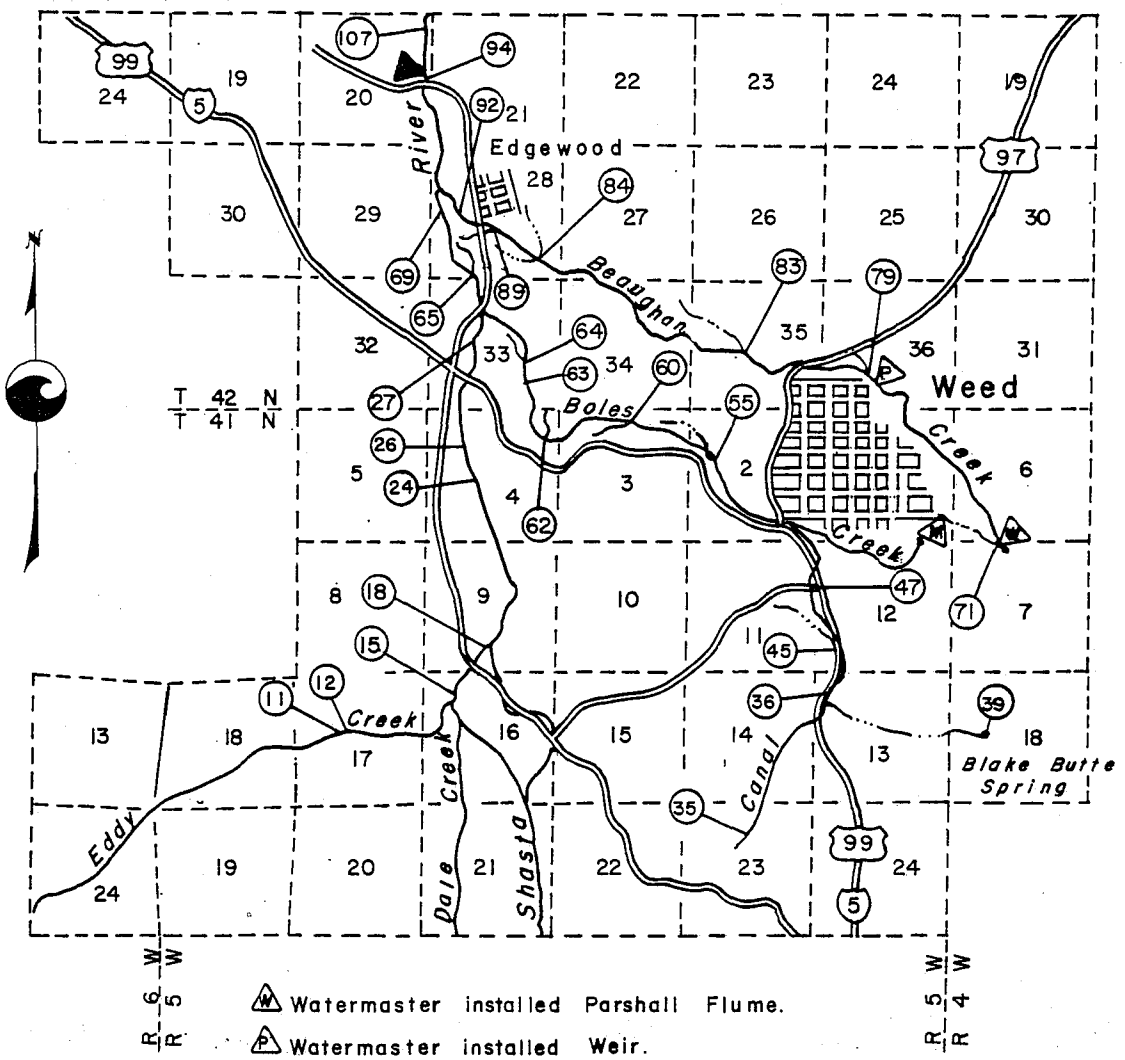


INDEX MAP SHASTA RIVER WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
11	Dow Ditch	0.044	1.55
12	Hammond-Scott Ditch	0.265	9.36
15	Dobkin Ditch	0.017	0.60
18	Yreka Ditch	0.850	30.00
24	Dillman	0.011	0.40
26	Mazzini	0.176	6.21
27	West Neal Ditch	0.028	1.00
35	Jones	0.011	0.40
36	International Paper Company	0.113	4.00
39	Black Butte Spring	0.014	0.50
45	Thompson Ditch	0.030	1.05
47	Sullivan Ditch	0.009	0.30
55	Salanti Ditch	0.033	1.175
60	Davidson Ditch	0.020	0.70*
62	Belcastro Ditch	0.003	0.10*
63	Upper Lemos Ditch	0.074	2.60
64	Lower Lemos Ditch	0.031	1.10
65	East Neal Ditch	0.023	0.80
69	Alexander Ditch	0.045	1.60
71-78	International Paper Company	0.115	4.07
79	Linville	0.020	0.70
83	Belcastro	0.016	0.55
84-87	Jackson	0.110	3.87
89	Ordway	0.011	0.40
92	Ordway	0.024	0.86
94	Davis	0.018	0.65
107	Mills Ranch	0.017	0.60

* Not in use

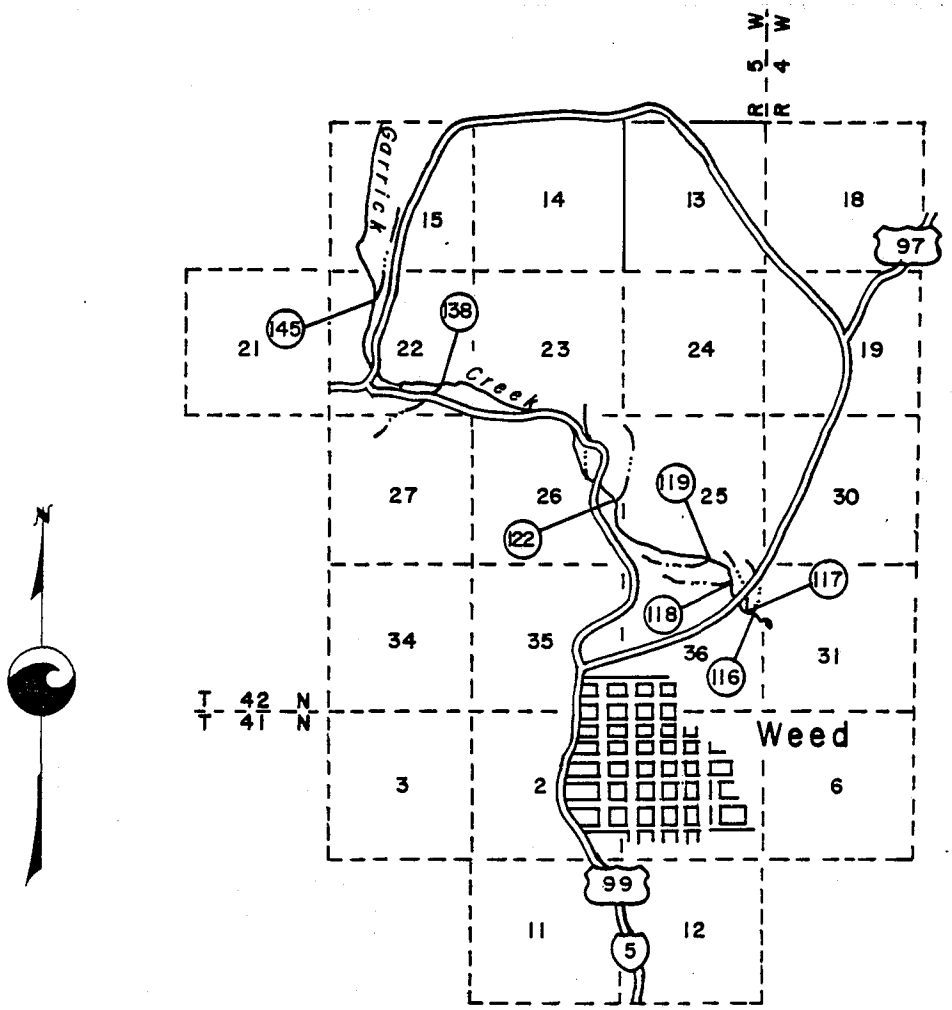
Figure 17a



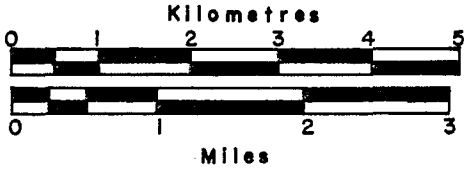
DIVERSIONS FROM SHASTA RIVER BEAUGHAN CREEK AND BOLES CREEK SHASTA RIVER WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
116	Zwanziger	0.062	2.20
117	Goltz	0.062	2.20
118	Belcostro-Luiz	0.011	0.40
119	Luiz	0.011	0.40
122	Hoy	0.024	0.86
138	Jackson	0.034	1.20
145	Mills	0.031	1.10

Figure 17b



Garrick Creek is shown as Carrick in the Decree.

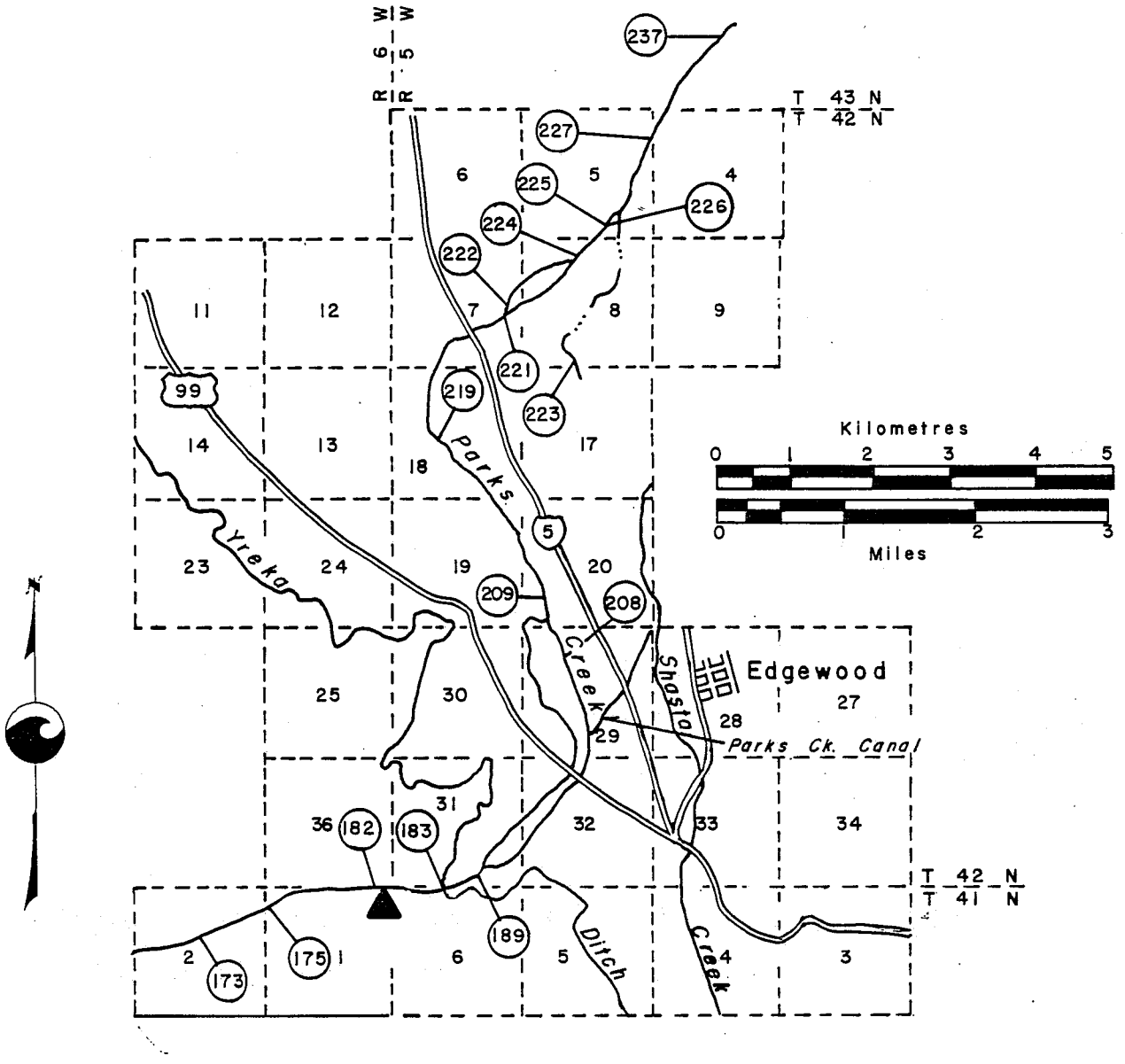


DIVERSIONS FROM GARRICK CREEK SHASTA RIVER WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
173	Vanderbilt	0.020	0.70
175	Vanderbilt	0.036	1.275
182	Duke, North	1/	1/
183	Yreka Ditch	0.430	15.20
189	Duke, South	1/	1/
221-227	Gragnani	0.496	17.20
208	Lemos	0.040	1.40
209	Bettencourt	0.026	0.90
219	Whitsett	0.024	0.85
237	Cardoza	0.084	2.98

1/ Allotment of 0.119 m^3/s (6.00 ft^3/s) in either ditch.

Figure 17c



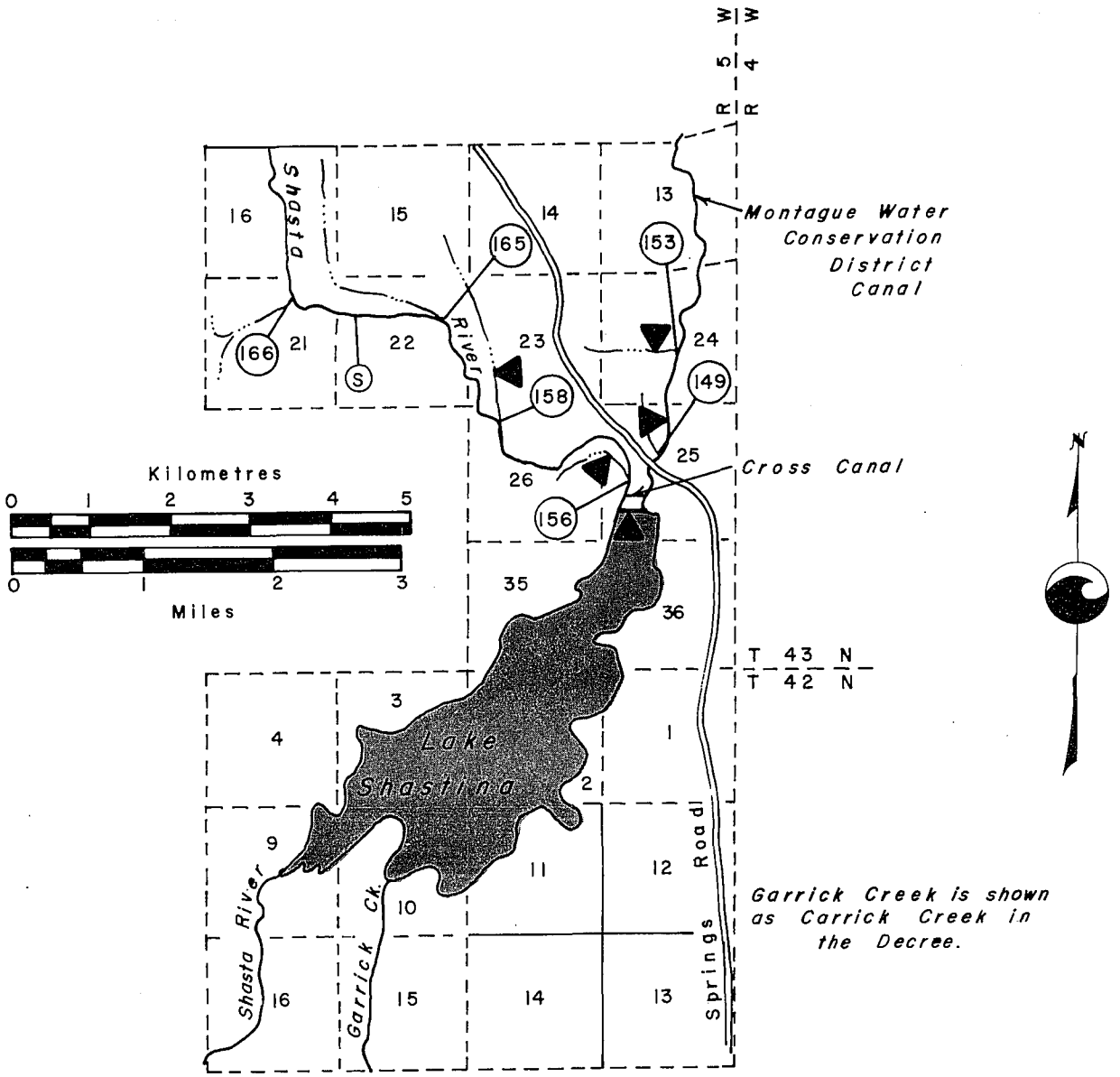
▲ Watermaster installed recorder station.

DIVERSIONS FROM PARKS CREEK SHASTA RIVER WATERMASTER SERVICE AREA

Diversion Number	Name	dam^3	Ac/Ft
149	Flying L Ranch	244	198
153	Taylor Ditch	1 480	1,200
156	Seldom-Seen Ranch	1 140	924
158	Ross Homes, Inc.	572	464
165-166[1/]	Hole-in-the-Ground Ranch	735	596
(S)	Clear Spring	6	5

1/ 3 pumps

Figure 17d

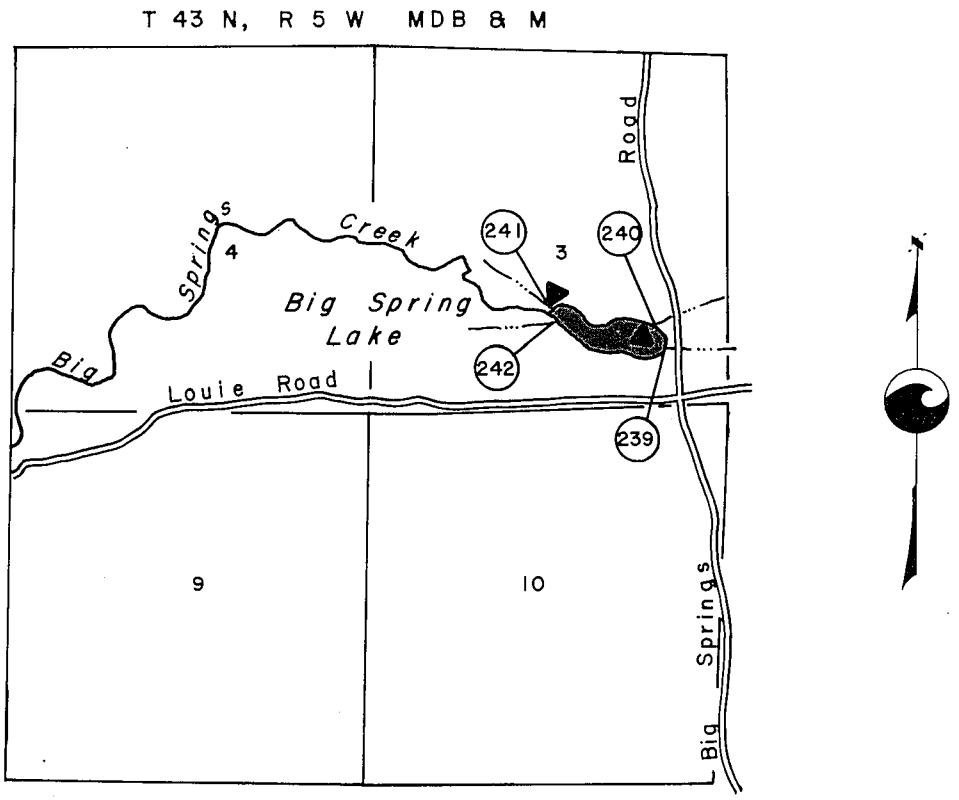


▲ Watermaster installed recorder station.

PRIOR RIGHTS BELOW LAKE SHASTINA
SHASTA RIVER WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
239	Brahs et al, pump	0.212	7.50
240	Big Springs I.D.	0.850	30.00
241-242	E. Louie Ditch	0.283	10.00

Figure 17e



▲ Watermaster installed recorder station

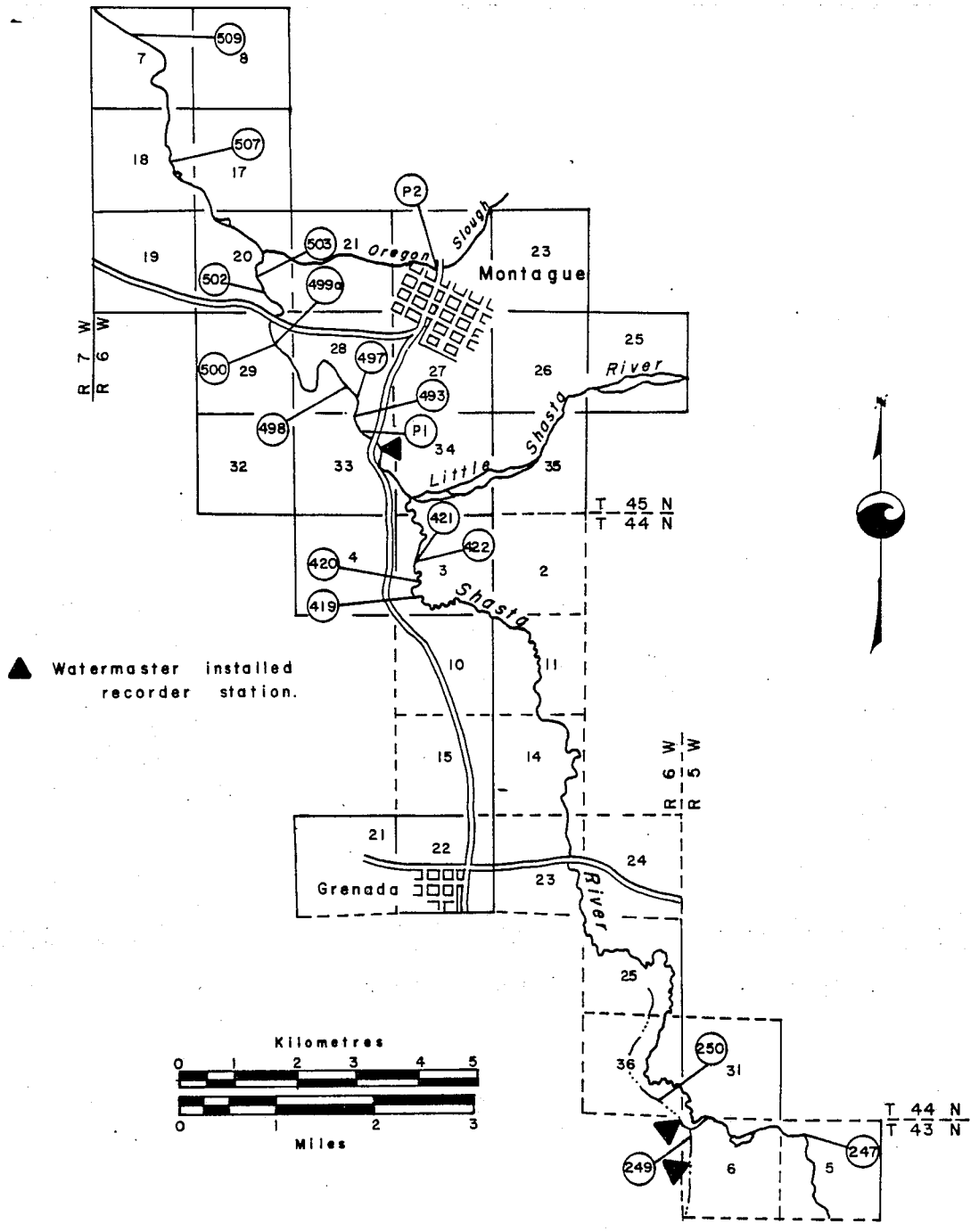
Kilometres
0 1 2 3 4 5
0 1 2 3
Miles

DIVERSIONS FROM BIG SPRINGS LAKE SHASTA RIVER WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
247	Nelson (pump)	0.067	2.37
249	Granada Irrigation District Pumps	1.133	40.00
250	Huesman Ditch	0.309	10.91*
419	Shasta River Water Users Association Pumps	1.189	42.00
420	Banhart	0.006	0.20
421,422	Kuck	0.064	2.25
493	Easton	0.003	0.10
497	Fiock (pump)	0.133	4.69
498	Fiock	0.034	1.20
499a,500	Lemos	0.020	0.70
502	Fiock - Alley	0.108	3.80
503	Fiock	0.167	5.90
507	Fiock	0.007	0.25
509	Peters - Johnson	0.050	1.75
P1	Meamber (pump)	0.006	0.22 *
P2	Meamber (pump)	0.028	1.00

* Plus undefined riparian rights

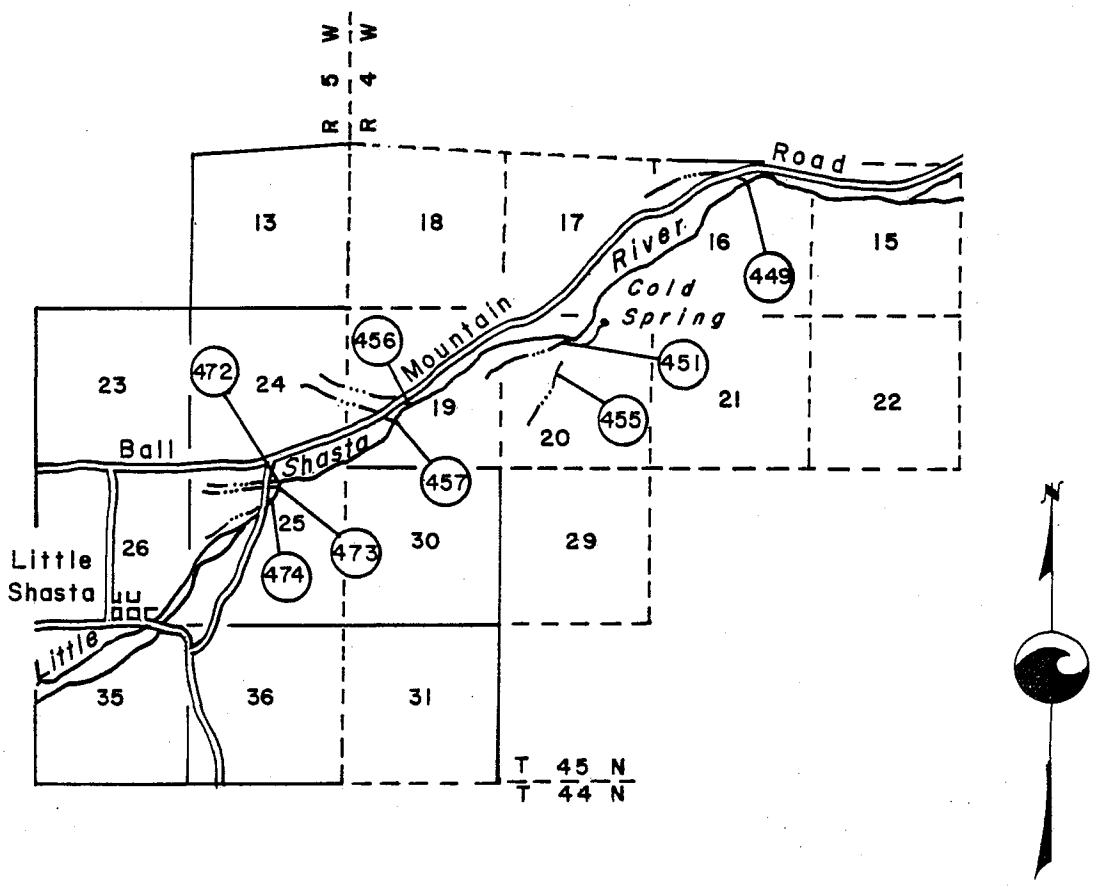
Figure 17f

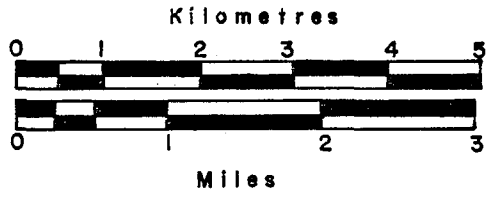


DIVERSIONS FROM LOWER SHASTA RIVER SHASTA RIVER WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
449	Harp Ditch	0.045	1.60
451	Terwilliger Ditch	0.032	1.12
455	Martin Ditch	0.170	6.00
456	Dimmick Ditch	0.003	0.12
457	S & T Ditch	0.187	6.60
472	M & L Ditch	0.555	19.60
473	BMS Ditch	0.203	7.19
474	HHP Ditch	0.283	10.00

Figure 17g.





DIVERSIONS FROM LITTLE SHASTA RIVER SHASTA RIVER WATERMASTER SERVICE AREA

SOUTH FORK PIT RIVER WATERMASTER SERVICE AREA

The South Fork Pit River service area is located primarily in southeastern Modoc County, with a small portion extending into northeastern Lassen County. Figures 18 through 18e, pages 155 through 163, show the South Fork and its tributaries, with roads, etc.

The major source of water for this service area is the South Fork Pit River and its tributaries which rise on the western slopes of the Warner Mountains. The river flows in a westerly direction, entering South Fork Valley near Likely. It then flows north through the valley to its confluence with the North Fork Pit River just south of Alturas. The South Fork Pit River is joined from the east by Fitzhugh Creek near the middle of the valley and by Pine Creek near Alturas.

The major area of water use is in South Fork Valley between Likely and Alturas. South Fork Valley is about 26 km (16 mi) long and 5 km (3 mi) wide, with the valley floor lying at an elevation of about 1 400 m (4,500 ft). The valley is bounded on both sides by a rocky plateau that separates it from the surrounding mountains.

Basis of Service

The Pine Creek agreement established water rights on Pine Creek November 22, 1933, and this stream system was added to the South Fork Pit River area on January 22, 1935. Pine Creek Reservoir, a small reservoir above all diversions, was originally used for power generation. This reservoir, now a recreation site, has a small water right but is not in the service area.

A large reservoir, West Valley Reservoir, was built in 1937 to increase the supply and extend the season for irrigation in the South Fork Irrigation District. The water rights for use from West Valley Reservoir total 28 200 dam^3 (23,100 ac-ft).

The South Fork Pit River decree and the Pine Creek agreement establish two priorities on the respective systems.

Water Supply

The water supply for Pine Creek is derived mostly from snowmelt runoff. Therefore, runoff is usually small in the early spring, increases to a peak in May as temperatures rise, and then gradually decreases throughout the remainder of the season. Water users supplement their irrigation supplies from other sources whenever possible.

The water supply for Fitzhugh Creek consists of snowmelt runoff early in the season and supplemental water diverted from Mill Creek above Jess Valley later in the season. Surplus water from Fitzhugh Creek is diverted into the Payne and French Reservoirs through Payne-French Ditch (Diversion 136) until about June, when the diversion is adjusted to allow sufficient flow to supply downstream allotments. By July, the creek has normally receded until only first priority allotments are available.

Payne Ditch (Diversion 1) is opened to import water from Mill Creek to Fitzhugh Creek when the snow has melted enough to allow access. This imported water is rediverted from North Fork Fitzhugh Creek through the Bowman Ditch to the Bowman Ranch. Return flow from Bowman Ranch to the creek is rediverted through Diversion 136.

The water supply for the South Fork Pit River is derived primarily from snowmelt runoff, supplemented by water released from West Valley Reservoir. A number of stream, which rise at high

elevations, collect at the mouth of Jess Valley to form the South Fork Pit River. West Valley Reservoir is located on West Valley Creek, which enters the river below Jess Valley.

Most of the water users on the South Fork Pit River, except those in Jess Valley, are in the South Fork Irrigation District. The District stores water in West Valley Reservoir and releases it to the South Fork Pit River as a supplemental supply when the natural flow becomes insufficient to meet demands. This usually occurs during the middle of June. Reservoir releases, together with the natural flow, are distributed by the watermaster in cooperation with the Board of Directors of the irrigation district. Except for extremely dry years, natural flow, combined with stored water, is sufficient to supply all demands for water on the South Fork Pit River throughout the irrigation season.

Akers Land and Cattle Company imports water from the Tule Reservoir to West Valley Reservoir via Cedar Creek. This water, 2 500 dam^3 (2,000 ac-ft) is then rediverted from South Fork Pit River to undecreed lands.

Method of Distribution

Irrigation of the lands along tributary streams is accomplished by flooding through the use of small lateral ditches. The water is distributed on a continuous-flow basis to each user through gravity-flow diversion systems. In some cases, rotation is practiced among several users.

Most irrigation in the South Fork Pit River area is by the check and border method. The lands receive water essentially on demand by supplementing natural flow with releases from West Valley Reservoir. However, irrigation must be coordinated between the various ranches to eliminate large peak demands from the reservoir and to use the return flow as much as possible.

Actual distribution varies each year, as there is no specific irrigation schedule in use.

1979 Distribution

L. L. Bates, Water Resources Engineering Associate, was transferred to Alturas on November 1, 1978, and serves as fulltime watermaster of this area.

The precipitation in the area was 60 percent of normal for the 1979 season.

Pine Creek. The flow and demands were low until May. The flows in May and June were high enough to allow an extra 600 dam^3 (500 ac-ft) storage to be diverted into Dorris Reservoir.

Fitzhugh Creek. The flow served all demands until the end of June. At that time, the annual sharp recession started dropping from full first priorities 0.10 m^3/s (3.60 ft^3/s) to 30 percent of first.

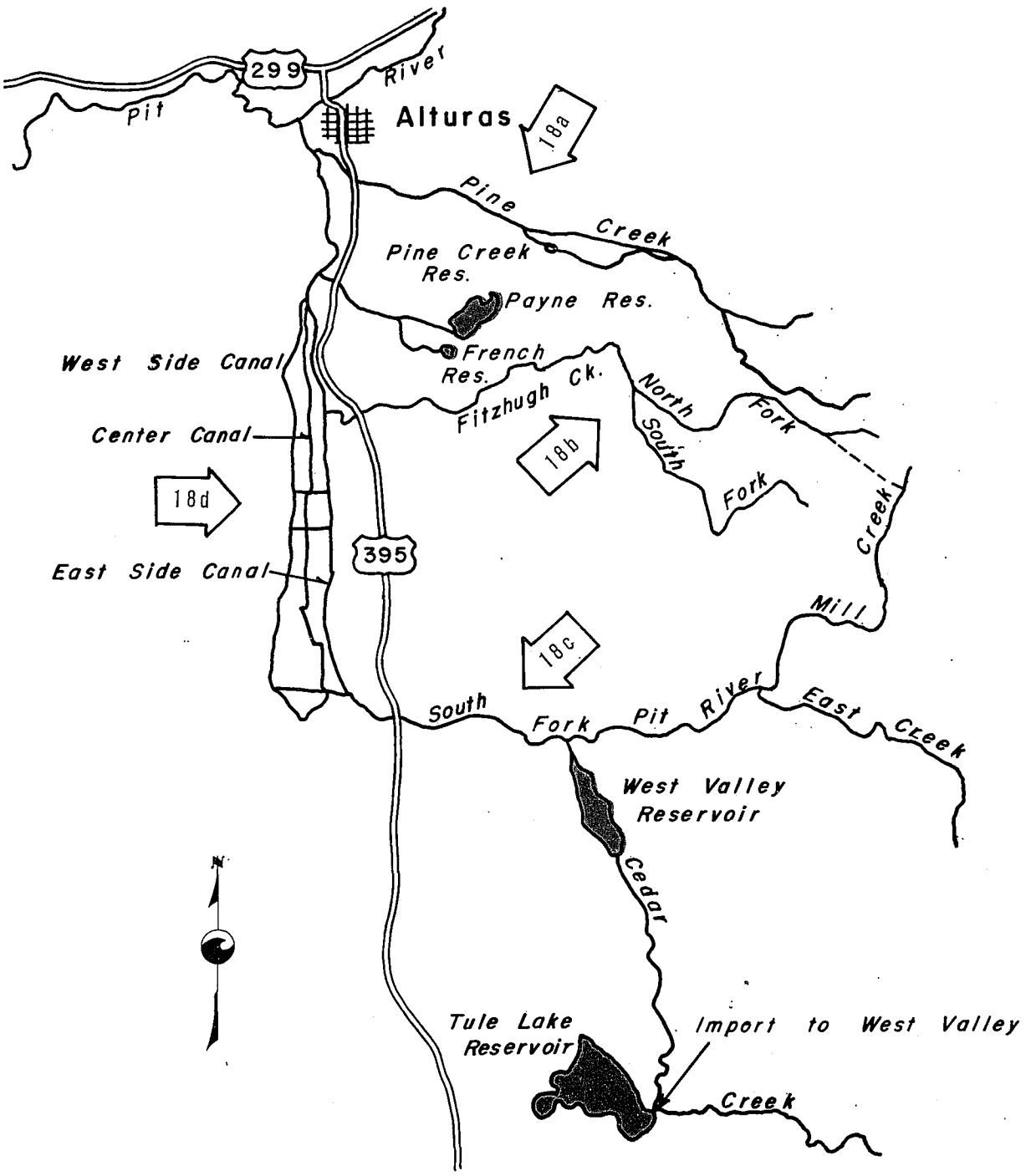
South Fork Pit River. The following is a summary of West Valley operation.

	First of Month Storage	
	dam^3	ac-ft
March	17 300	14,000
April	20 000	16,900
May	24 600	19,900
June	25 900	21,000
July	20 400	16,500
August	12 300	10,000
September	3 700	3,000

All releases were made on a demand basis and constant attention was required to avoid waste.

Weekly district meetings have proven invaluable to insure proper distribution.

Figure 18



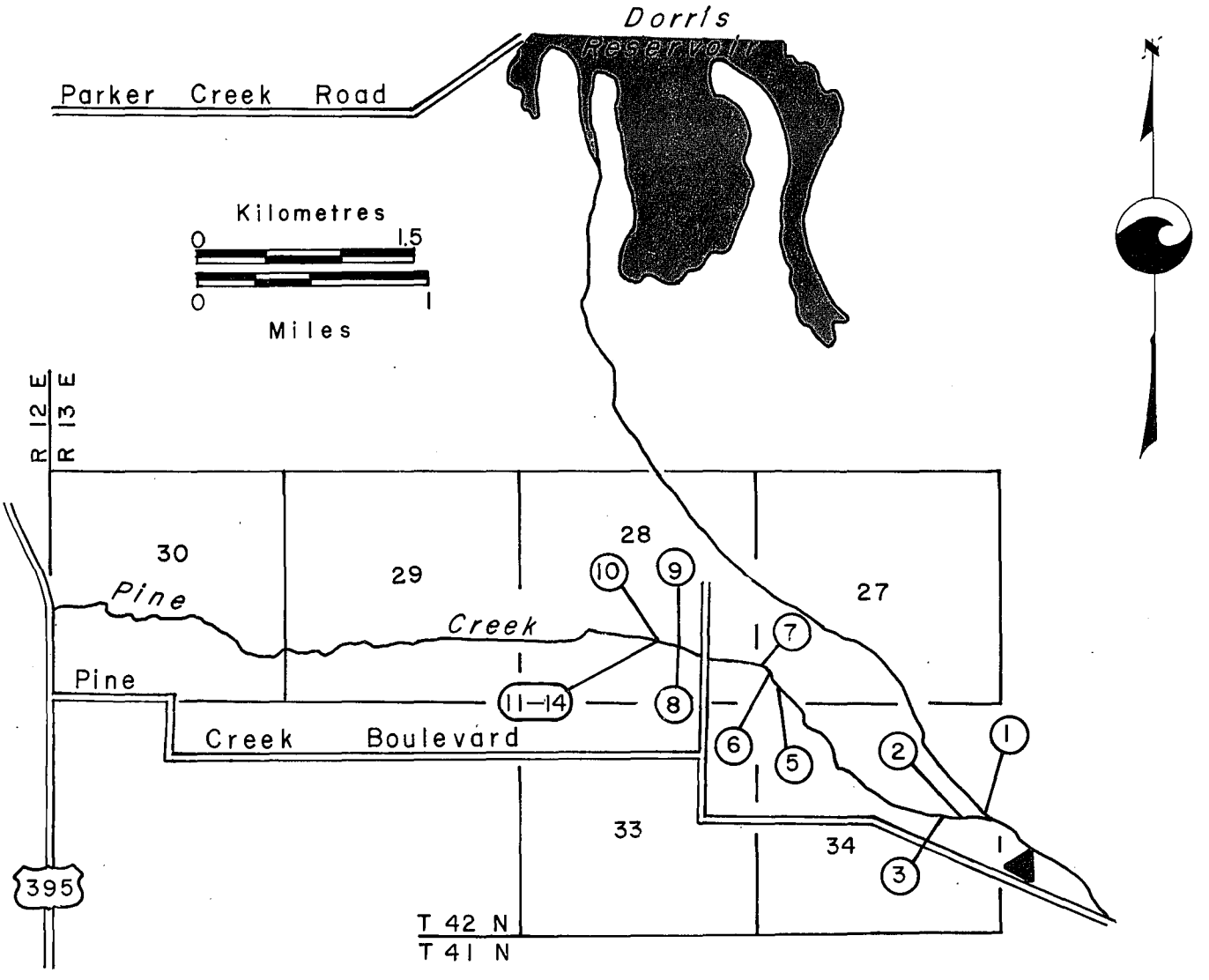
INDEX MAP
SOUTH FORK PIT RIVER
WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
1	Anninos	0.008	0.30
	Bagwell	0.003	0.10
	Baker	0.001	0.13
	Boyle	0.085	3.00
	Leman	0.008	0.30
	Neer	0.012	0.43
	Stephens	0.095	3.35
	Sullivan	0.004	0.14
	Wall	0.003	0.10
2,3,6,9	Rice	0.137	4.85
5	Dunn and Baker	0.040	1.43
	Nelson	0.107	3.77
	Weber Brothers	0.125	4.40
	Younger	0.097	3.42
10	Wildlife Refuge	0.886	31.30
11-14	Dunn and Baker	0.084	2.98

NOTE: Pine Creek channel capacity below No. 5 is about 0.566 m^3/s (20 ft^3/s).

Surplus Pine Creek flow is diverted into Dorris Reservoir.

Figure 18a

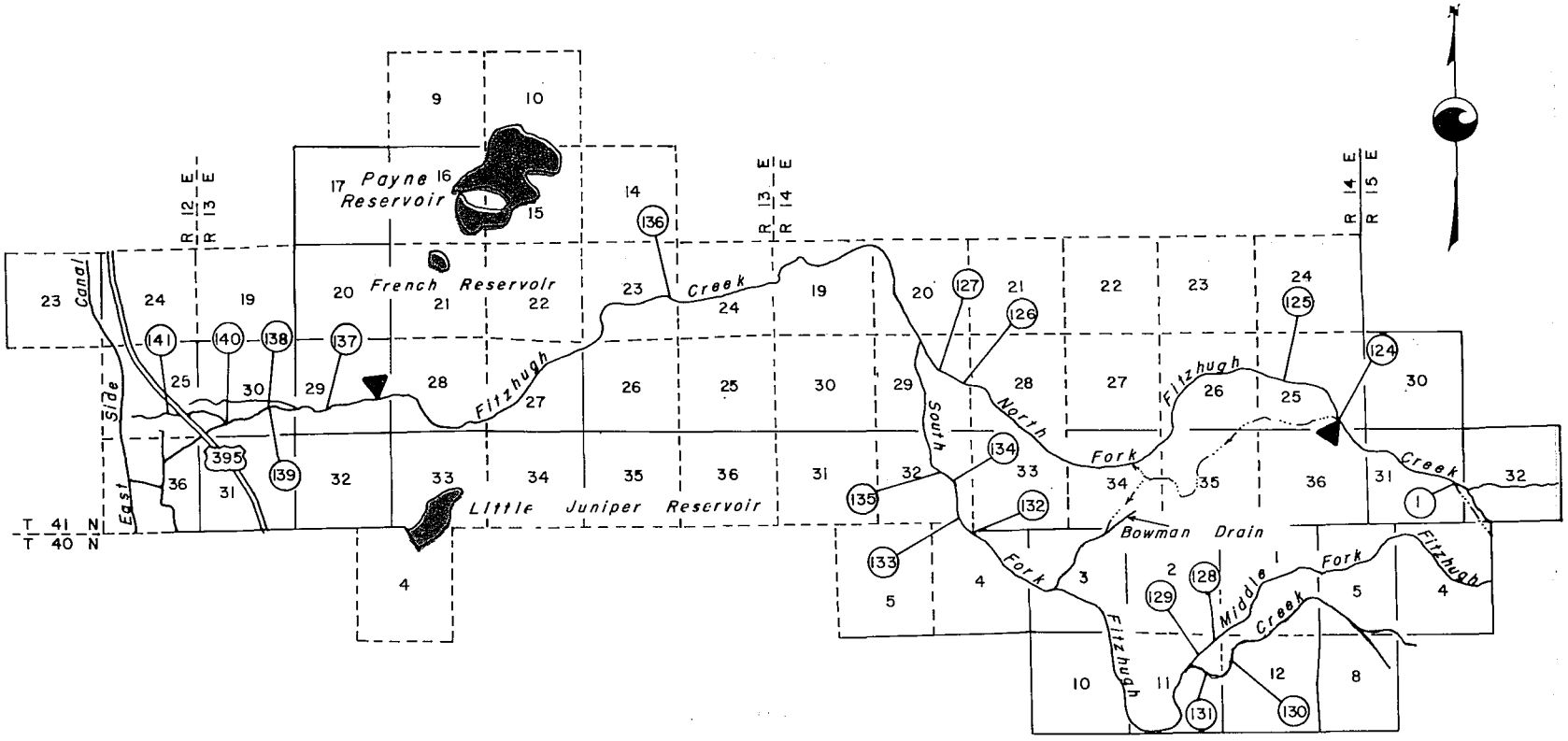


▲ Watermaster installed recorder station.

DIVERSIONS FROM PINE CREEK SOUTH FORK PIT RIVER WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
1	Jobe	0.066	2.34[1/]
124	Jobe	0.017[2/]	0.60[2/]
125	Swanson	0.045	1.60
126-127	Weber	0.014	0.50
128-131	Harris	0.034	1.20
132-135	Weber	0.020	0.70
136	Nevis Corporation	3/	3/
137-141	Bell	0.141	5.00
142	Akers Land & Cattle Co.	0.152	5.40

1/ Water is imported from Mill Creek.
2/ Plus imported water from Mill Creek.
3/ Surplus water plus water from Bowman Drain due to imported water from Mill Creek.



▲ Watermaster installed recorder station.

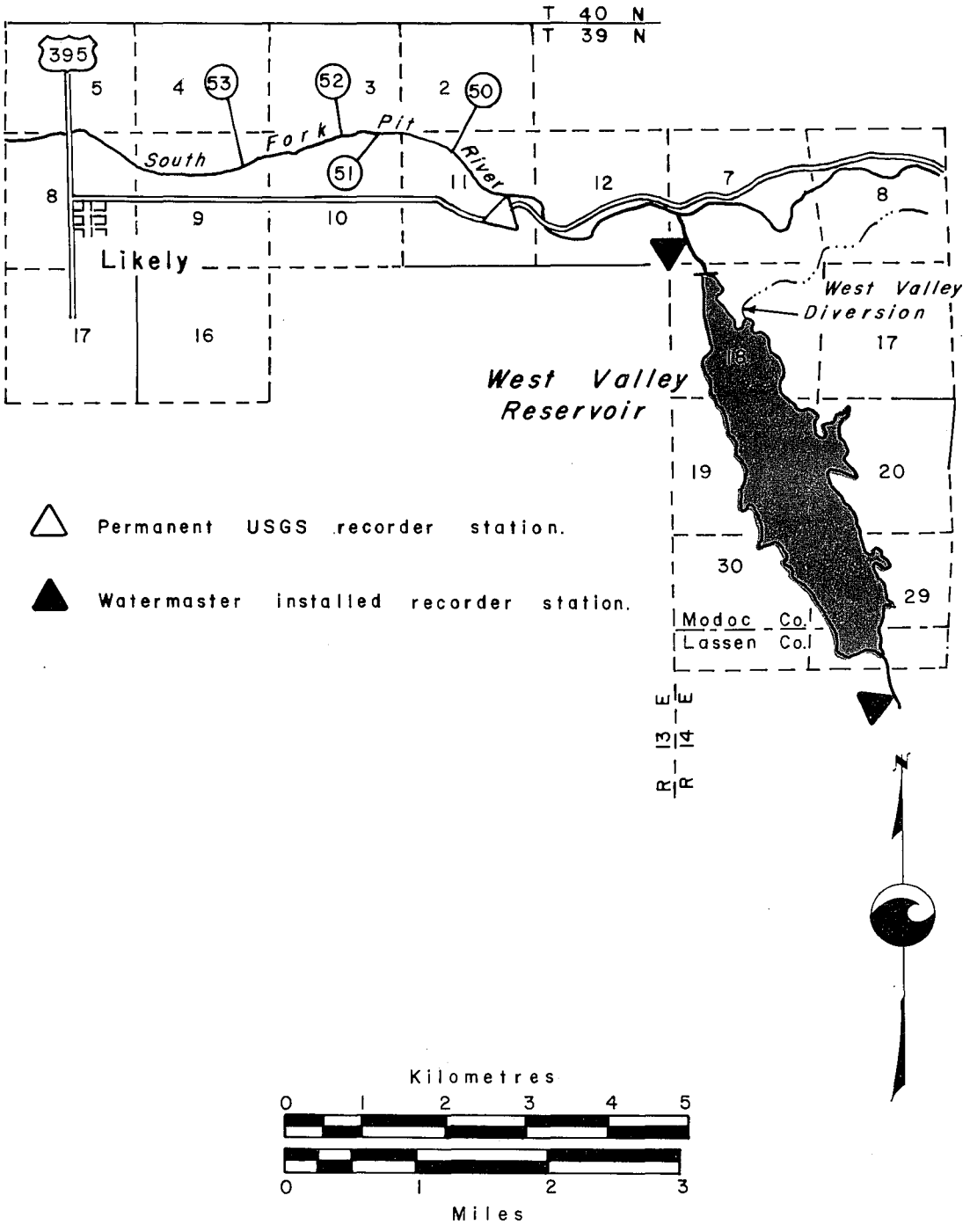
Kilometres
0 1 2 3 4 5
0 1 2 3
Miles

DIVERSIONS FROM FITZHUGH CREEK SOUTH FORK PIT RIVER WATERMASTER SERVICE AREA

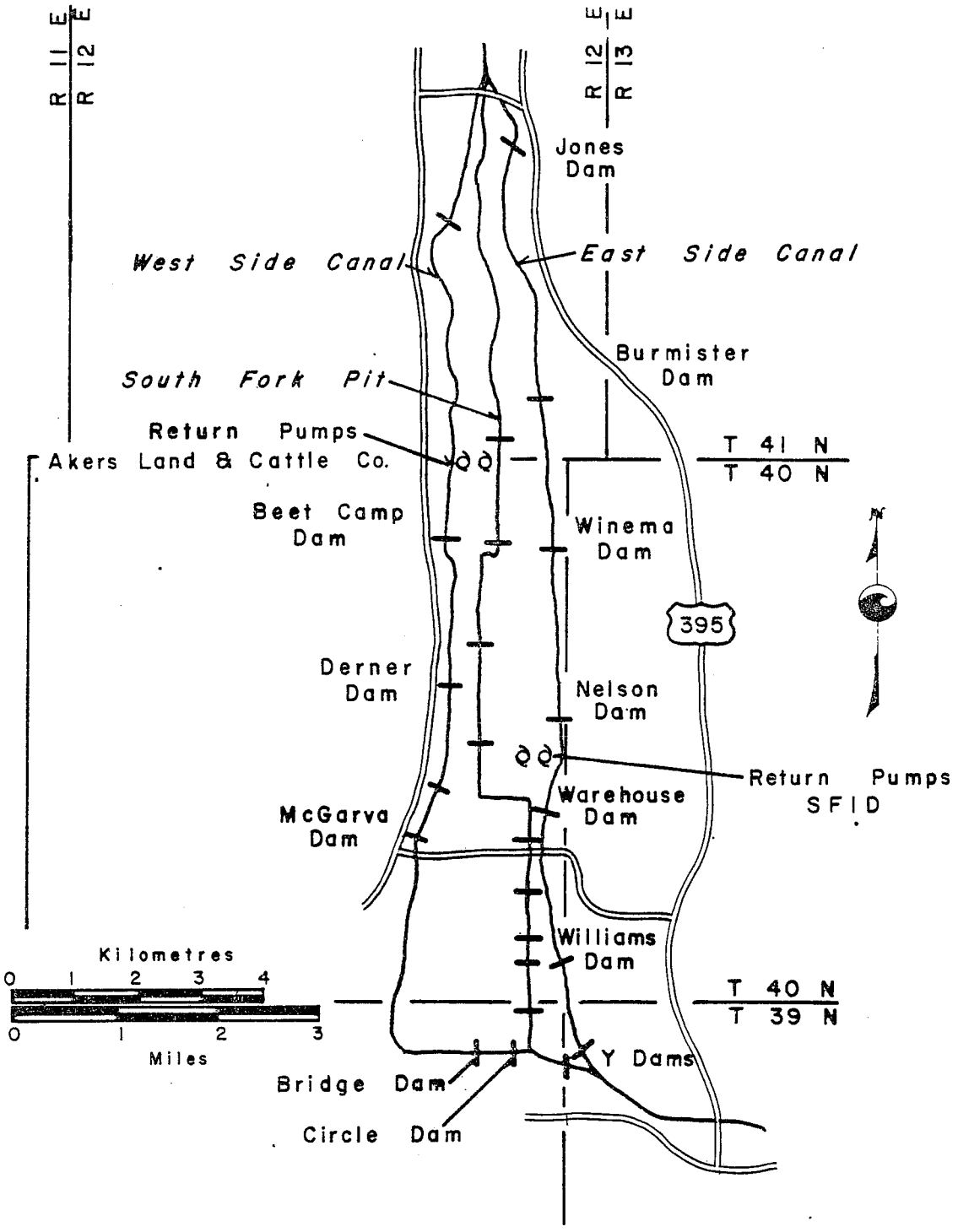
Figure 18b

Diversion Number	Name	Allotment Percentage
50	Van Loan	34.50
	Flournoy Brothers	65.50
51	Van Loan	100.00
52	Van Loan	33.33
	Hamel	33.33
	Monroe	16.66
	McGarva Brothers	16.66
53	Flournoy	33.33
	Van Loan	66.66

Figure 18c



DIVERSIONS FROM SOUTH FORK PIT RIVER
SOUTH FORK PIT RIVER
WATERMASTER SERVICE AREA



DIVERSIONS FROM SOUTH FORK PIT RIVER
SOUTH FORK PIT RIVER
WATERMASTER SERVICE AREA

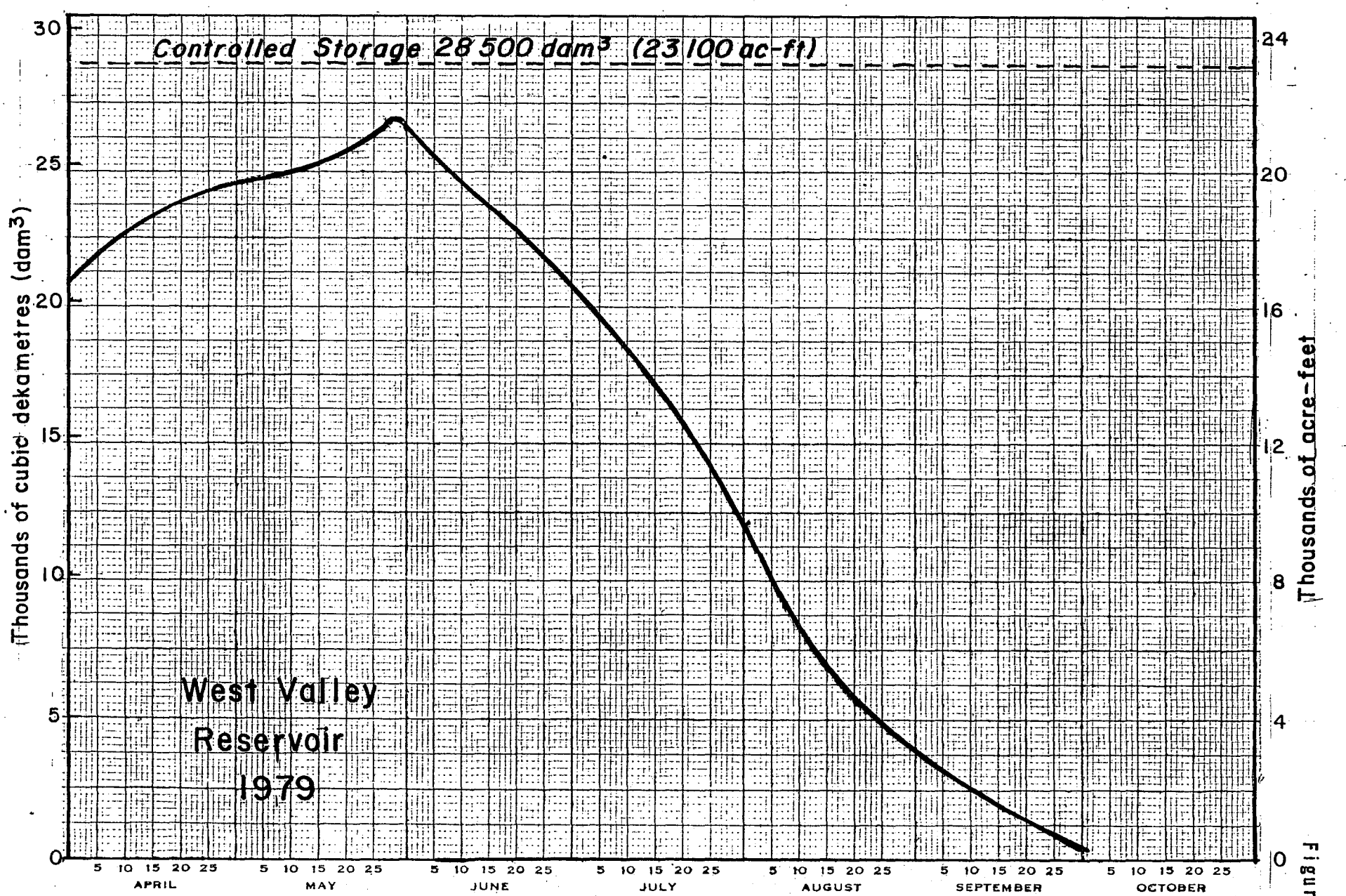

Controlled Storage 28 500 dam³ (23 100 ac-ft)
West Valley
Reservoir
1979
Thousands of cubic dekametres (dam³)
Thousands of acre-feet
30
25
20
15
10
5
0
24
20
16
12
8
4
0
5 10 15 20 25
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

Figure 18a

SOUTH FORK PIT RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 37

SOUTH FORK PIT RIVER NEAR LIKELY

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1	0.153	5.4	0.193	6.8	4.644	164.0	4.446	157.0	3.880	137.0	3.625	128.0	2.096	74.0	1
2	0.142	5.0	0.144	5.1	4.588	162.0	4.248	150.0	3.965	140.0	3.512	124.0	1.954	69.0	2
3	0.133	4.7	0.136	4.8	5.154	182.0	4.163	147.0	3.993	141.0	4.021	142.0	1.897	67.0	3
4	0.130	4.6	0.122	4.3	5.636	199.0	4.758	168.0	3.908	138.0	4.446	157.0	1.869	66.0	4
5	0.368	13.0	0.198	7.0	5.324	188.0	5.777	204.0	3.710	131.0	4.390	155.0	1.869	66.0	5
6	1.303	46.0	0.481	17.0	4.701	166.0	6.825	241.0	3.568	126.0	4.361	154.0	1.841	65.0	6
7	2.067	73.0	0.425	15.0	3.965	140.0	6.315	223.0	3.625	128.0	4.333	153.0	1.784	63.0	7
8	2.152	76.0	0.396	14.0	2.860	101.0	6.089	215.0	3.597	127.0	4.276	151.0	1.756	62.0	8
9	1.643	58.0	0.510	18.0	2.096	74.0	5.976	211.0	3.540	125.0	4.248	150.0	1.756	62.0	9
10	1.444	51.0	0.425	15.0	1.614	57.0	5.891	208.0	3.455	122.0	4.276	151.0	1.869	66.0	10
11	1.473	52.0	0.736	26.0	2.436	86.0	5.692	201.0	3.483	123.0	4.248	150.0	1.756	62.0	11
12	1.444	51.0	0.708	25.0	3.540	125.0	5.636	199.0	3.398	120.0	4.191	148.0	1.728	61.0	12
13	1.104	39.0	0.510	18.0	4.248	150.0	5.494	194.0	3.512	124.0	4.191	148.0	1.643	58.0	13
14	0.878	31.0	0.481	17.0	4.786	169.0	5.409	191.0	3.427	121.0	4.135	146.0	1.614	57.0	14
15	0.935	33.0	0.595	21.0	5.466	193.0	5.183	183.0	3.285	116.0	4.163	147.0	1.614	57.0	15
16	0.991	35.0	0.821	29.0	6.089	215.0	5.126	181.0	3.313	117.0	3.767	133.0	1.558	55.0	16
17	0.935	33.0	0.793	28.0	6.599	233.0	5.806	205.0	3.313	117.0	3.002	106.0	1.558	55.0	17
18	0.793	28.0	0.736	26.0	7.278	257.0	5.749	203.0	3.228	114.0	2.974	105.0	1.558	55.0	18
19	0.595	21.0	0.510	18.0	7.930	280.0	4.135	146.0	3.228	114.0	2.917	103.0	1.558	55.0	19
20	0.453	16.0	0.510	18.0	8.213	290.0	3.823	135.0	3.483	123.0	2.634	93.0	1.529	54.0	20
21	0.368	13.0	0.481	17.0	7.788	275.0	3.540	125.0	3.852	136.0	2.096	74.0	1.529	54.0	21
22	0.340	12.0	0.566	20.0	7.278	257.0	3.313	117.0	4.135	146.0	2.039	72.0	1.501	53.0	22
23	0.283	10.0	0.595	21.0	6.825	241.0	3.115	110.0	3.908	138.0	1.926	68.0	1.473	52.0	23
24	0.283	10.0	0.481	17.0	6.259	221.0	2.974	105.0	3.852	136.0	1.897	67.0	1.473	52.0	24
25	0.312	11.0	0.425	15.0	5.551	196.0	2.832	100.0	3.880	137.0	1.954	69.0	1.473	52.0	25
26	0.396	14.0	0.963	34.0	5.098	180.0	3.030	107.0	3.795	134.0	1.982	70.0	1.473	52.0	26
27	0.368	13.0	2.832	100.0	4.956	175.0	3.936	139.0	3.738	132.0	1.954	69.0	1.473	52.0	27
28	0.340	12.0	4.050	143.0	4.475	158.0	3.880	137.0	3.738	132.0	2.039	72.0	1.444	51.0	28
29	0.340	12.0	4.305	152.0	3.795	134.0	3.852	136.0	3.767	133.0	2.266	80.0	1.388	49.0	29
30	0.312	11.0	4.163	147.0	3.144	111.0	3.880	137.0	3.682	130.0	2.181	77.0	1.359	48.0	30
31	0.246	8.7			3.625	128.0			3.653	129.0	2.152	76.0			31
MEAN	0.733	25.9	0.943	33.3	5.031	177.6	4.696	165.8	3.642	128.6	3.232	114.1	1.646	58.1	MEAN
DAM^3	1962.		2443.		13466.		12165.		9749.		8651.		4264.		DAM^3
AC-FT		1591.		1980.		10917.		9862.		7903.		7013.		3457.	AC-FT

SOUTH FORK PIT RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 38

WEST VALLEY CREEK BELOW WEST VALLEY

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1					1.926	68.0	1.048	37.0	3.342	118.0	3.625	128.0	1.869	66.0	1
2					1.926	68.0	1.048	37.0	3.342	118.0	3.568	126.0	1.869	66.0	2
3					1.926	68.0	1.048	37.0	3.313	117.0	4.135	146.0	1.841	65.0	3
4					1.926	68.0	1.699	60.0	3.313	117.0	4.786	169.0	1.812	64.0	4
5					1.926	68.0	2.775	98.0	3.313	117.0	4.786	169.0	1.756	62.0	5
6					1.926	68.0	3.993	141.0	3.257	115.0	4.729	167.0	1.756	62.0	6
7					1.416	50.0	3.993	141.0	3.257	115.0	4.701	166.0	1.728	61.0	7
8					0.368	13.0	3.993	141.0	3.257	115.0	4.644	164.0	1.699	60.0	8
9					0.000	0.0	3.993	141.0	3.257	115.0	4.588	162.0	1.699	60.0	9
10					0.000	0.0	3.993	141.0	3.257	115.0	4.531	160.0	1.671	59.0	10
11					0.000	0.0	3.993	141.0	3.257	115.0	4.475	158.0	1.643	58.0	11
12					0.000	0.0	3.993	141.0	3.228	114.0	4.446	157.0	1.643	58.0	12
13					0.000	0.0	3.993	141.0	3.228	114.0	4.390	155.0	1.614	57.0	13
14					0.000	0.0	3.936	139.0	3.228	114.0	4.333	153.0	1.614	57.0	14
15					0.000	0.0	3.936	139.0	3.172	112.0	4.220	149.0	1.586	56.0	15
16					0.000	0.0	3.936	139.0	3.144	111.0	3.767	133.0	1.558	55.0	16
17					0.000	0.0	3.908	138.0	3.144	111.0	2.974	105.0	1.529	54.0	17
18					0.000	0.0	2.804	99.0	3.144	111.0	2.889	102.0	1.501	53.0	18
19					0.000	0.0	1.699	60.0	3.115	110.0	2.889	102.0	1.473	52.0	19
20					0.000	0.0	1.671	59.0	3.342	118.0	2.577	91.0	1.444	51.0	20
21					0.000	0.0	1.671	59.0	3.682	130.0	2.039	72.0	1.416	50.0	21
22					0.000	0.0	1.699	60.0	3.625	128.0	2.039	72.0	1.388	49.0	22
23					0.000	0.0	1.699	60.0	3.625	128.0	2.039	72.0	1.359	48.0	23
24					0.000	0.0	1.699	60.0	3.625	128.0	2.011	71.0	1.331	47.0	24
25					0.000	0.0	1.699	60.0	3.625	128.0	2.011	71.0	1.274	45.0	25
26			0.396	14.0*	0.000	0.0	2.266	80.0	3.625	128.0	2.011	71.0	1.274	45.0	26
27			1.388	49.0	0.000	0.0	3.398	120.0	3.568	126.0	1.982	70.0	1.246	44.0	27
28			1.926	68.0	0.000	0.0	3.398	120.0	3.568	126.0	1.926	68.0	1.189	42.0	28
29			1.926	68.0	0.000	0.0	3.342	118.0	3.568	126.0	1.926	68.0	1.161	41.0	29
30			1.926	68.0	0.000	0.0	3.342	118.0	3.540	125.0	1.897	67.0	1.104	39.0	30
31					0.425	15.0			3.568	126.0	1.897	67.0			31
MEAN			0.252	8.9	0.444	15.7	2.856	100.8	3.372	119.1	3.317	117.1	1.535	54.2	MEAN
DAM^3			653.		1188.		7397.		9025.		8878.		3976.		DAM^3
AC-FT				529.		963.		5996.		7317.		7198.		3223.	AC-FT

* Beginnig of record

SOUTH FORK PIT RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 39

FITZHUGH CREEK BELOW DIVERSION NO. 137

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.057	2.0	0.623	22.0	0.221	7.8	0.071	2.5	0.065	2.3	0.096	3.4	1
2			0.057	2.0	0.595	21.0	0.198	7.0	0.076	2.7	0.065	2.3	0.091	3.2	2
3			0.057	2.0	0.623	22.0	0.187	6.6	0.082	2.9	0.065	2.3	0.085	3.0	3
4			0.057	2.0	0.623	22.0	0.193	6.8	0.082	2.9	0.065	2.3	0.085	3.0	4
5			0.062	2.2	0.566	20.0	0.147	5.2	0.082	2.9	0.065	2.3	0.082	2.9	5
6			0.119	4.2	0.538	19.0	0.147	5.2	0.076	2.7	0.065	2.3	0.076	2.7	6
7			0.110	3.9	0.566	20.0	0.142	5.0	0.065	2.3	0.065	2.3	0.076	2.7	7
8			0.071	2.5	0.566	20.0	0.136	4.8	0.065	2.3	0.065	2.3	0.076	2.7	8
9			0.147	5.2	0.906	32.0	0.130	4.6	0.065	2.3	0.065	2.3	0.076	2.7	9
10			0.076	2.7	0.906	32.0	0.125	4.4	0.065	2.3	0.065	2.3	0.071	2.5	10
11			0.283	10.0	0.878	31.0	0.119	4.2	0.065	2.3	0.065	2.3	0.076	2.7	11
12			0.340	12.0	0.821	29.0	0.108	3.8	0.065	2.3	0.065	2.3	0.076	2.7	12
13			0.091	3.2	0.793	28.0	0.096	3.4	0.065	2.3	0.065	2.3	0.071	2.5	13
14			0.110	3.9	0.736	26.0	0.082	2.9	0.065	2.3	0.065	2.3	0.065	2.3	14
15			0.167	5.9	0.708	25.0	0.085	3.0	0.065	2.3	0.065	2.3	0.065	2.3	15
16			0.232	8.2	0.680	24.0	0.102	3.6	0.062	2.2	0.065	2.3	0.065	2.3	16
17			0.187	6.6	0.651	23.0	0.142	5.0	0.062	2.2	0.065	2.3	0.062	2.2	17
18			0.125	4.4	0.651	23.0	0.241	8.5	0.062	2.2	0.065	2.3	0.062	2.2	18
19			0.110	3.9	0.623	22.0	0.187	6.6	0.062	2.2	0.065	2.3	0.057	2.0	19
20			0.062	2.2	0.595	21.0	0.142	5.0	0.062	2.2	0.065	2.3	0.054	1.9	20
21			0.057	2.0	0.595	21.0	0.108	3.8	0.062	2.2	0.071	2.5	0.057	2.0	21
22			0.096	3.4	0.566	20.0	0.096	3.4	0.062	2.2	0.076	2.7	0.057	2.0	22
23			0.057	2.0	0.510	18.0	0.096	3.4	0.062	2.2	0.082	2.9	0.057	2.0	23
24			0.037	1.3	0.453	16.0	0.085	3.0	0.062	2.2	0.079	2.8	0.062	2.2	24
25			0.102	3.6	0.396	14.0	0.082	2.9	0.062	2.2	0.076	2.7	0.065	2.3	25
26			0.425	15.0	0.396	14.0	0.082	2.9	0.059	2.1	0.076	2.7	0.062	2.2	26
27			0.623	22.0	0.368	13.0	0.085	3.0	0.057	2.0	0.076	2.7	0.062	2.2	27
28			0.566	20.0	0.340	12.0	0.076	2.7	0.057	2.0	0.076	2.7	0.057	2.0	28
29			0.595	21.0	0.312	11.0	0.065	2.3	0.062	2.2	0.076	2.7	0.057	2.0	29
30			0.595	21.0	0.266	9.4	0.065	2.3	0.062	2.2	0.136	4.8	0.062	2.2	30
31					0.227	8.0			0.065	2.3	0.110	3.9			31
MEAN			0.189	6.7	0.583	20.6	0.126	4.4	0.066	2.3	0.072	2.6	0.069	2.4	MEAN
DAM^3			490.		1561.		325.		176.		193.		178.		DAM^3
AC-FT				397.		1266.		264.		143.		157.		145.	AC-FT

SOUTH FORK PIT RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 40

PINE CREEK NEAR ALTURAS

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.340	12.0	0.736	26.0	1.388	49.0	0.595	21.0	0.312	11.0	0.272	9.6	1
2			0.340	12.0	0.736	26.0	1.274	45.0	0.595	21.0	0.312	11.0	0.266	9.4	2
3			0.312	11.0	0.793	28.0	1.218	43.0	0.566	20.0	0.312	11.0	0.263	9.3	3
4			0.312	11.0	0.850	30.0	1.189	42.0	0.566	20.0	0.312	11.0	0.263	9.3	4
5			0.340	12.0	0.821	29.0	1.189	42.0	0.538	19.0	0.312	11.0	0.261	9.2	5
6			0.453	16.0	0.736	26.0	1.246	44.0	0.538	19.0	0.312	11.0	0.255	9.0	6
7			0.510	18.0	0.708	25.0	1.303	46.0	0.510	18.0	0.312	11.0	0.252	8.9	7
8			0.453	16.0	0.765	27.0	1.303	46.0	0.481	17.0	0.312	11.0	0.246	8.7	8
9			0.595	21.0	0.821	29.0	1.303	46.0	0.481	17.0	0.283	10.0	0.249	8.8	9
10			0.538	19.0	0.736	26.0	1.218	43.0	0.453	16.0	0.283	10.0	0.246	8.7	10
11			0.963	34.0	0.765	27.0	1.133	40.0	0.453	16.0	0.283	10.0	0.249	8.8	11
12			0.736	26.0	0.850	30.0	1.076	38.0	0.453	16.0	0.283	10.0	0.249	8.8	12
13			0.510	18.0	0.935	33.0	1.020	36.0	0.453	16.0	0.283	10.0	0.249	8.8	13
14			0.510	18.0	1.048	37.0	0.991	35.0	0.425	15.0	0.312	11.0	0.246	8.7	14
15			0.538	19.0	1.133	40.0	0.991	35.0	0.425	15.0	0.312	11.0	0.246	8.7	15
16			0.566	20.0	1.161	41.0	0.963	34.0	0.425	15.0	0.283	10.0	0.246	8.7	16
17			0.566	20.0	1.218	43.0	0.991	35.0	0.396	14.0	0.278	9.8	0.244	8.6	17
18			0.623	22.0	1.331	47.0	0.963	34.0	0.396	14.0	0.275	9.7	0.241	8.5	18
19			0.566	20.0	1.501	53.0	0.935	33.0	0.396	14.0	0.272	9.6	0.244	8.6	19
20			0.510	18.0	1.728	61.0	0.906	32.0	0.396	14.0	0.312	11.0	0.241	8.5	20
21			0.481	17.0	1.954	69.0	0.850	30.0	0.425	15.0	0.312	11.0	0.235	8.3	21
22			0.510	18.0	2.096	74.0	0.793	28.0	0.425	15.0	0.278	9.8	0.232	8.2	22
23			0.481	17.0	2.209	78.0	0.765	27.0	0.396	14.0	0.278	9.8	0.235	8.3	23
24			0.481	17.0	2.152	76.0	0.736	26.0	0.368	13.0	0.272	9.6	0.235	8.3	24
25			0.481	17.0	2.124	75.0	0.708	25.0	0.368	13.0	0.272	9.6	0.246	8.7	25
26			0.510	18.0	2.067	73.0	0.651	23.0	0.368	13.0	0.275	9.7	0.249	8.8	26
27			0.595	21.0	2.039	72.0	0.595	21.0	0.340	12.0	0.272	9.6	0.244	8.6	27
28			0.623	22.0	1.954	69.0	0.595	21.0	0.340	12.0	0.340	12.0	0.238	8.4	28
29			0.623	22.0	1.841	65.0	0.623	22.0	0.340	12.0	0.312	11.0	0.235	8.3	29
30			0.651	23.0	1.699	60.0	0.623	22.0	0.340	12.0	0.312	11.0	0.235	8.3	30
31					1.501	53.0			0.312	11.0	0.283	10.0			31
MEAN			0.524	18.5	1.323	46.7	0.985	34.8	0.438	15.5	0.295	10.4	0.247	8.7	MEAN
DAM^3			1357.		3541.		2550.		1171.		790.		640.		DAM^3
AC-FT				1100.		2870.		2068.		950.		641.		519.	AC-FT

SURPRISE VALLEY WATERMASTER SERVICE AREA

The Surprise Valley service area is situated in extreme eastern Modoc County, east of the Warner Mountains. Figure 19, page 177, shows the service area, the streams serving it, and the towns and roads of the valley.

Ten individual stream systems rising on the eastern slope of the Warner Mountains supply water to the area. These streams are fed by snowmelt runoff and traverse a fast, precipitous course down the eastern slope of the Warner Mountains to the valley floor where numerous scattered diversion ditches convey water to the irrigated lands.

Basis of Service

The Surprise Valley watermaster service area was created January 10, 1939, including Mill, Soldier, Pine, Cedar, Deep, Owl, Rader, and Emerson Creeks, all of which previously had watermaster service individually. Service was started on Eagle Creek at that time. Bidwell Creek was added to the service area March 16, 1960. Each of the ten stream systems is under separate decrees. See Table 41, page 168, for specific data regarding the decrees and water rights on the individual creeks.

Water Supply

The water supply is derived almost entirely from snowmelt runoff, with only minor spring-fed flows occurring in the latter part of the season. Due to the steep eastern slope of the Warner Mountains, there are no known economically justified storage sites on the service area streams. Because of the lack of such regulatory storage, the available water supply at any specific diversion point may vary considerably within a few hours. An extreme diurnal temperature variation causes extensive variation in snowmelt runoff. This problem is further aggravated by the relatively short, steep drainage area. In addition, occasional summer thundershowers may cause a creek to discharge a flow of mammoth proportions for several hours. These flashes are apt to cause considerably damage in the form of washouts and debris deposition and are of such short duration that no beneficial use can be made of the water.

Records of the daily mean discharge at several stream gaging stations within the service area are presented in Tables 42 through 53, pages 169 through 174 .

Method of Distribution

The continuous-flow method of distribution is employed on most creeks; however, in a few instances the available water supply is rotated among the users in accordance with either decree schedule or by mutual agreement.

Alfalfa and meadow hay, the major crops grown in the valley, are irrigated by sprinklers and wild flooding, although some lands depend upon subsurface irrigation. A few of these systems work by gravity, but most employ pumps with the surface water supplemented by deep wells. Many additional acres have been put into production during the past few years through the use of deep wells. Only surface water supplies are under State watermaster service.

To facilitate distribution of irrigation water, construction of permanent diversion dams, headgages, and measuring devices has been stressed during recent years. Although these structures do not solve the problems of discharge variation and debris deposition, they do provide significant assistance in solving water measurement and distribution problems. The individual streams and locations of the diversions are shown on Figures 19a through 19k, pages 178 through 199.

TABLE 41

DECREES AND RELATED DATA - SURPRISE VALLEY STREAMS

Stream	Modoc County Superior Court Decree No.	Date	Type[a]	Service Area Created	No. of Water Right Owners	Total m^3/s	Total	Remarks
Bidwell	6420	1-13-60	S	3-16-60[b]	46	1.805	63.74	(Schedule 3) 3 priorities March 15-July 19. (Schedule 4) 5 priorities July 10-September 30. If no water passing Diversion No. 23 September 30-March 14, 1st priority provisions of Schedule 4 apply.
Mill	3024	12-19-31	CR	12-30-31	38	1.051	37.13	One priority on Brown Creek, tributary to Rutherford Creek, 7 priorities on Rutherford Creek, tributary to Mill Creek, 4 priorities on Mill Creek, 1st and 2nd for year-round use, 3rd and 4th April through September.
Soldier	2045	11-28-28	CR	9-11-29	13 4[c]	0.949 0.124	33.50 4.37	Starting March 19 each year, lower users receive water for 4 13-day periods alternating with upper users who receive water for 4 10-day periods, ending June 19. 7 priorities during lower users periods, 8 during upper users periods and 12 for rest of the year. Appropriative License 1566, 1613, 1648, and 1850.
Pine	3391	12-07-36	CR	1-13-37	5 1[c]	[d] 0.002	[d] 0.08	One full rotation totalling 850 dam^3 (693 AF). Rotation continues until flow decreases to 0.113 m^3/s (4 ft^3/s), them all water goes to Cal-Vada Ranch until flow decreases to 0.045 m^3/s (1.60 ft^3/s), then all water goes to the R. Bordwell Ranch.
Cedar	1206 2343 [d]	5-22-01 2-15-23	CA CA	9-11-29	12	0.818	28.90[d]	Water rights established by these two decrees and an agreement signed by all users. No. 1206 set 1st and 2nd priorities; No. 2443 3rd priority and agreement the 4th. 0.818 m^3/s (28.90 ft^3/s) includes 0.142 m^3/s (5.00 ft^3/s) imported from Thoms Creek on west slope of Warner Mountains.
Deep	3101	1-25-34	CR	12-29-34	11	0.832	29.37	Schedule 2 establishes 5 priorities, year-round.
Cottonwood	6903	12-01-64	CA	7-01-77[b]	8	[d]	[d]	Water rights based on a percentage of flow in an equal priority.
Owl	2410	5-29-29	CA	9-11-29	8 1[c]	1.181	41.70	21 priorities; all year-round but 8th, under which each of 3 owners receives his allotment for an 8-day period. Appropriative License No. 2842, 0.015 m^3/s (0.54 ft^3/s).
Rader	3626	6-04-37	CR	6-12-37	6	0.595	21.00	7 priorities. 7th is for surplus water. Diversions No. 1, 3, 6, and 7 have seasonal limitations.
Eagle	2304 3284	4-05-26 11-05-37	CA CR	1-10-39	36	0.866	30.57	Decree No. 3284 added rights in all priority classes, and established 4 classes. 0.127 m^3/s (4.50 ft^3/s) right of Betford Corp. is for use March 1 to July 1. Eagleville 'town users', Schedule 2 may divert through Gee & Grider ditches March 16 to October 14 each year. Set 1st priority rights of Gee & Grider ditches, Par. XVII & XVIII, for use April 15 to October 1.
Emerson	2840	3-25-30	CR	4-11-30	10	0.698	24.65	4 priorities, 1st is for year-round use, others April 1 to September 30.

a/ S-Statutory, CR-Court Reference, CA-Court Adjudication.
b/ Added to existing Surprise Valley service area.
c/ Appropriative rights junior to the decreed rights.
d/ See remarks.

SURPRISE VALLEY WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 42

BIDWELL CREEK NEAR FORT BIDWELL

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.283	10.0	1.728	61.0	1.501	53.0	0.453	16.0	0.176	6.2	0.147	5.2	1
2			0.278	9.8	1.671	59.0	1.416	50.0	0.453	16.0	0.173	6.1	0.139	4.9	2
3			0.263	9.3	1.869	66.0	1.416	50.0	0.425	15.0	0.167	5.9	0.136	4.8	3
4			0.283	10.0	2.266	80.0	1.529	54.0	0.425	15.0	0.161	5.7	0.133	4.7	4
5			0.425	15.0	2.152	76.0	1.586	56.0	0.396	14.0	0.161	5.7	0.130	4.6	5
6			0.651	23.0	1.699	60.0	1.558	55.0	0.368	13.0	0.159	5.6	0.119	4.2	6
7			0.595	21.0	1.303	46.0	1.388	49.0	0.368	13.0	0.159	5.6	0.113	4.0	7
8			0.566	20.0	1.161	41.0	1.218	43.0	0.340	12.0	0.153	5.4	0.108	3.8	8
9			0.566	20.0	1.104	39.0	1.076	38.0	0.340	12.0	0.144	5.1	0.108	3.8	9
10			0.510	18.0	1.076	38.0	0.963	34.0	0.340	12.0	0.142	5.0	0.105	3.7	10
11			0.481	17.0	1.189	42.0	0.906	32.0	0.312	11.0	0.142	5.0	0.105	3.7	11
12			0.425	15.0	1.473	52.0	0.878	31.0	0.312	11.0	0.139	4.9	0.099	3.5	12
13			0.623	22.0	1.926	68.0	0.878	31.0	0.283	10.0	0.193	6.8	0.099	3.5	13
14			0.708	25.0	2.464	87.0	0.850	30.0	0.283	10.0	0.173	6.1	0.099	3.5	14
15			0.935	33.0	2.719	96.0	0.765	27.0	0.280	9.9	0.159	5.6	0.096	3.4	15
16			1.133	40.0	2.889	102.0	0.736	26.0	0.263	9.3	0.147	5.2	0.093	3.3	16
17			0.991	35.0	2.832	100.0	0.850	30.0	0.249	8.8	0.139	4.9	0.088	3.1	17
18			0.793	28.0	2.917	103.0	0.850	30.0	0.252	8.9	0.136	4.8	0.088	3.1	18
19			0.651	23.0	3.030	107.0	0.821	29.0	0.244	8.6	0.133	4.7	0.105	3.7	19
20			0.595	21.0	3.087	109.0	0.765	27.0	0.241	8.5	0.147	5.2	0.102	3.6	20
21			0.595	21.0	3.059	108.0	0.736	26.0	0.244	8.6	0.156	5.5	0.093	3.3	21
22			0.651	23.0	3.172	112.0	0.680	24.0	0.246	8.7	0.142	5.0	0.093	3.3	22
23			0.595	21.0	3.144	111.0	0.623	22.0	0.238	8.4	0.133	4.7	0.093	3.3	23
24			0.566	20.0	2.974	105.0	0.595	21.0	0.224	7.9	0.130	4.6	0.091	3.2	24
25			0.623	22.0	2.832	100.0	0.566	20.0	0.212	7.5	0.125	4.4	0.088	3.1	25
26			0.765	27.0	2.719	96.0	0.566	20.0	0.207	7.3	0.125	4.4	0.091	3.2	26
27			0.765	27.0	2.719	96.0	0.538	19.0	0.198	7.0	0.125	4.4	0.091	3.2	27
28			1.189	42.0	2.464	87.0	0.481	17.0	0.195	6.9	0.272	9.6	0.088	3.1	28
29			1.359	48.0	2.124	75.0	0.481	17.0	0.190	6.7	0.178	6.3	0.082	2.9	29
30			1.586	56.0	1.869	66.0	0.481	17.0	0.187	6.6	0.193	6.8	0.082	2.9	30
31					1.643	58.0			0.178	6.3	0.167	5.9			31
MEAN			0.682	24.1	2.235	78.9	0.923	32.6	0.289	10.2	0.156	5.5	0.103	3.7	MEAN
DAM^3			1766.		5981.		2391.		772.		418.		268.		DAM^3
AC-FT				1431.		4849.		1939.		626.		339.		217.	AC-FT

SURPRISE VALLEY WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 43

MILL CREEK ABOVE ALL DIVERSIONS

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.246	8.7	0.878	31.0	0.793	28.0	0.283	10.0	0.102	3.6	0.065	2.3	1
2			0.235	8.3	0.906	32.0	0.793	28.0	0.283	10.0	0.105	3.7	0.054	1.9	2
3			0.235	8.3	0.963	34.0	0.793	28.0	0.278	9.8	0.093	3.3	0.059	2.1	3
4			0.249	8.8	1.076	38.0	0.793	28.0	0.272	9.6	0.093	3.3	0.062	2.2	4
5			0.312	11.0	1.048	37.0	0.821	29.0	0.255	9.0	0.079	2.8	0.059	2.1	5
6			0.425	15.0	0.906	32.0	0.793	28.0	0.235	8.3	0.079	2.8	0.054	1.9	6
7			0.425	15.0	0.821	29.0	0.736	26.0	0.218	7.7	0.074	2.6	0.051	1.8	7
8			0.425	15.0	0.793	28.0	0.708	25.0	0.178	6.3	0.105	3.7	0.054	1.9	8
9			0.453	16.0	0.765	27.0	0.651	23.0	0.170	6.0	0.142	5.0	0.057	2.0	9
10			0.425	15.0	0.765	27.0	0.623	22.0	0.195	6.9	0.176	6.2	0.057	2.0	10
11			0.425	15.0	0.793	28.0	0.623	22.0	0.195	6.9	0.215	7.6	0.057	2.0	11
12			0.425	15.0	0.850	30.0	0.623	22.0	0.193	6.8	0.244	8.6	0.057	2.0	12
13			0.510	18.0	0.906	32.0	0.595	21.0	0.184	6.5	0.283	10.0	0.059	2.1	13
14			0.538	19.0	1.076	38.0	0.566	20.0	0.173	6.1	0.340	12.0	0.059	2.1	14
15			0.623	22.0	1.161	41.0	0.538	19.0	0.150	5.3	0.312	11.0	0.057	2.0	15
16			0.651	23.0	1.246	44.0	0.538	19.0	0.139	4.9	0.278	9.8	0.057	2.0	16
17			0.623	22.0	1.218	43.0	0.538	19.0	0.142	5.0	0.261	9.2	0.057	2.0	17
18			0.566	20.0	1.246	44.0	0.510	18.0	0.139	4.9	0.249	8.8	0.057	2.0	18
19			0.538	19.0	1.218	43.0	0.368	13.0	0.142	5.0	0.266	9.4	0.074	2.6	19
20			0.538	19.0	1.189	42.0	0.312	11.0	0.133	4.7	0.283	10.0	0.093	3.3	20
21			0.538	19.0	1.246	44.0	0.453	16.0	0.142	5.0	0.278	9.8	0.093	3.3	21
22			0.538	19.0	1.274	45.0	0.425	15.0	0.136	4.8	0.249	8.8	0.093	3.3	22
23			0.538	19.0	1.246	44.0	0.425	15.0	0.127	4.5	0.269	9.5	0.093	3.3	23
24			0.538	19.0	1.218	43.0	0.396	14.0	0.122	4.3	0.263	9.3	0.091	3.2	24
25			0.566	20.0	1.218	43.0	0.368	13.0	0.119	4.2	0.275	9.7	0.071	2.5	25
26			0.595	21.0	1.218	43.0	0.368	13.0	0.116	4.1	0.278	9.8	0.068	2.4	26
27			0.708	25.0	1.161	41.0	0.340	12.0	0.110	3.9	0.278	9.8	0.068	2.4	27
28			0.765	27.0	1.048	37.0	0.312	11.0	0.110	3.9	0.272	9.6	0.068	2.4	28
29			0.793	28.0	0.963	34.0	0.312	11.0	0.110	3.9	0.105	3.7	0.068	2.4	29
30			0.850	30.0	0.878	31.0	0.283	10.0	0.110	3.9	0.088	3.1	0.068	2.4	30
31					0.821	29.0			0.105	3.7	0.065	2.3			31
MEAN			0.510	18.0	1.036	36.6	0.547	19.3	0.170	6.0	0.200	7.1	0.066	2.3	MEAN
DAM^3			1321.		2773.		1416.		455.		535.		171.		DAM^3
AC-FT				1071.		2248.		1148.		369.		434.		139.	AC-FT

SURPRISE VALLEY WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 44

SOLDIER CREEK ABOVE ALL DIVERSIONS

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.187	6.6	1.076	38.0	0.280	9.9	0.093	3.3	0.037	1.3	0.025	0.9	1
2			0.176	6.2	1.133	40.0	0.312	11.0	0.082	2.9	0.037	1.3	0.023	0.8	2
3			0.176	6.2	1.133	40.0	0.312	11.0	0.082	2.9	0.034	1.2	0.023	0.8	3
4			0.244	8.6	1.133	40.0	0.312	11.0	0.068	2.4	0.031	1.1	0.023	0.8	4
5			0.312	11.0	1.189	42.0	0.312	11.0	0.068	2.4	0.025	0.9	0.023	0.8	5
6			0.368	13.0	1.246	44.0	0.280	9.9	0.071	2.5	0.023	0.8	0.023	0.8	6
7			0.340	12.0	1.303	46.0	0.244	8.6	0.065	2.3	0.023	0.8	0.020	0.7	7
8			0.312	11.0	1.359	48.0	0.207	7.3	0.065	2.3	0.023	0.8	0.020	0.7	8
9			0.368	13.0	1.416	50.0	0.221	7.8	0.062	2.2	0.023	0.8	0.020	0.7	9
10			0.283	10.0	1.473	52.0	0.161	5.7	0.062	2.2	0.025	0.9	0.020	0.7	10
11			0.280	9.9	1.501	53.0	0.150	5.3	0.059	2.1	0.023	0.8	0.020	0.7	11
12			0.340	12.0	1.558	55.0	0.150	5.3	0.057	2.0	0.025	0.9	0.020	0.7	12
13			0.312	11.0	1.614	57.0	0.150	5.3	0.054	1.9	0.028	1.0	0.020	0.7	13
14			0.396	14.0	1.671	59.0	0.150	5.3	0.054	1.9	0.031	1.1	0.017	0.6	14
15			0.821	29.0	1.728	61.0	0.142	5.0	0.051	1.8	0.028	1.0	0.017	0.6	15
16			0.510	18.0	1.784	63.0	0.150	5.3	0.051	1.8	0.023	0.8	0.014	0.5	16
17			0.340	12.0	1.841	65.0	0.170	6.0	0.051	1.8	0.023	0.8	0.014	0.5	17
18			0.283	10.0	1.756	62.0	0.170	6.0	0.045	1.6	0.023	0.8	0.014	0.5	18
19	0.193	6.8*	0.207	7.3	1.756	62.0	0.167	5.9	0.045	1.6	0.023	0.8	0.014	0.5	19
20	0.195	6.9	0.227	8.0	1.841	65.0	0.142	5.0	0.045	1.6	0.025	0.9	0.014	0.5	20
21	0.198	7.0	0.312	11.0	1.643	58.0	0.133	4.7	0.045	1.6	0.025	0.9	0.014	0.5	21
22	0.198	7.0	0.340	12.0	1.388	49.0	0.133	4.7	0.045	1.6	0.023	0.8	0.011	0.4	22
23	0.232	8.2	0.312	11.0	1.076	38.0	0.122	4.3	0.045	1.6	0.020	0.7	0.014	0.5	23
24	0.280	9.9	0.261	9.2	0.906	32.0	0.122	4.3	0.045	1.6	0.020	0.7	0.011	0.4	24
25	0.283	10.0	0.340	12.0	0.821	29.0	0.113	4.0	0.042	1.5	0.020	0.7	0.014	0.5	25
26	0.312	11.0	0.510	18.0	0.906	32.0	0.102	3.6	0.042	1.5	0.020	0.7	0.014	0.5	26
27	0.266	9.4	0.821	29.0	0.623	22.0	0.102	3.6	0.040	1.4	0.020	0.7	0.014	0.5	27
28	0.232	8.2	0.623	22.0	0.481	17.0	0.102	3.6	0.040	1.4	0.045	1.6	0.014	0.5	28
29	0.221	7.8	0.708	25.0	0.340	12.0	0.093	3.3	0.037	1.3	0.034	1.2	0.014	0.5	29
30	0.210	7.4	1.218	43.0	0.312	11.0	0.093	3.3	0.037	1.3	0.031	1.1	0.014	0.5	30
31	0.198	7.0			0.312	11.0			0.037	1.3	0.028	1.0			31
MEAN	0.097	3.4	0.397	14.0	1.236	43.6	0.177	6.2	0.054	1.9	0.026	0.9	0.017	0.6	MEAN
DAM^3	261.		1029.		3308.		457.		146.		71.		45.		DAM^3
AC-FT		211.		835.		2682.		371.		118.		57.		36.	AC-FT

* Beginning of record

SURPRISE VALLEY WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 45

PINE CREEK NORTH AT DIVISION OF NORTH AND SOUTH CHANNELS

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.119	4.2	0.481	17.0	0.074	2.6							1
2			0.102	3.6	0.510	18.0	0.065	2.3							2
3			0.099	3.5	0.453	16.0	0.057	2.0							3
4			0.133	4.7	0.425	15.0	0.054	1.9							4
5			0.283	10.0	0.368	13.0	0.051	1.8							5
6			0.283	10.0	0.340	12.0	0.048	1.7							6
7			0.453	16.0	0.312	11.0	0.045	1.6							7
8			0.221	7.8	0.340	12.0	0.042	1.5							8
9			0.207	7.3	0.396	14.0	0.040	1.4							9
10			0.212	7.5	0.453	16.0	0.037	1.3							10
11			0.215	7.6	0.538	19.0	0.034	1.2							11
12			0.269	9.5	0.510	18.0	0.031	1.1							12
13			0.340	12.0	0.481	17.0	0.028	1.0							13
14			0.340	12.0	0.453	16.0	0.028	1.0							14
15			0.481	17.0	0.481	17.0	0.025	0.9							15
16			0.481	17.0	0.453	16.0	0.023	0.8							16
17			0.340	12.0	0.368	13.0	0.023	0.8							17
18			0.269	9.5	0.368	13.0	0.020	0.7							18
19			0.241	8.5	0.312	11.0	0.017	0.6							19
20	0.125	4.4*	0.258	9.1	0.212	7.5	0.017	0.6							20
21	0.116	4.1	0.312	11.0	0.204	7.2	0.014	0.5							21
22	0.110	3.9	0.312	11.0	0.176	6.2	0.011	0.4							22
23	0.127	4.5	0.246	8.7	0.144	5.1	0.008	0.3							23
24	0.181	6.4	0.252	8.9	0.136	4.8	0.008	0.3							24
25	0.212	7.5	0.368	13.0	0.127	4.5	0.006	0.2							25
26	0.207	7.3	0.396	14.0	0.119	4.2	0.006	0.2							26
27	0.170	6.0	0.453	16.0	0.113	4.0	0.003	0.1							27
28	0.167	5.9	0.510	18.0	0.105	3.7	0.003	0.1							28
29	0.156	5.5	0.396	14.0	0.096	3.4	0.000	0.0							29
30	0.139	4.9	0.425	15.0	0.088	3.1	0.000	0.0							30
31	0.119	4.2			0.079	2.8									31
MEAN	0.059	2.1	0.301	10.6	0.311	11.0	0.027	1.0							MEAN
DAM^3	158.		779.		833.		71.								DAM^3
AC-FT		128.		631.		675.		57.							AC-FT

* Beginning of record

SURPRISE VALLEY WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 46

CEDAR CREEK NEAR CEDARVILLE

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.212	7.5	0.595	21.0	0.229	8.1	0.045	1.6	0.006	0.2	0.006	0.2	1
2			0.198	7.0	0.595	21.0	0.215	7.6	0.045	1.6	0.006	0.2	0.006	0.2	2
3			0.187	6.6	0.595	21.0	0.207	7.3	0.040	1.4	0.006	0.2	0.006	0.2	3
4			0.204	7.2	0.595	21.0	0.198	7.0	0.037	1.3	0.006	0.2	0.006	0.2	4
5			0.261	9.2	0.595	21.0	0.181	6.4	0.037	1.3	0.006	0.2	0.006	0.2	5
6			0.340	12.0	0.538	19.0	0.170	6.0	0.034	1.2	0.003	0.1	0.006	0.2	6
7			0.312	11.0	0.510	18.0	0.159	5.6	0.031	1.1	0.003	0.1	0.006	0.2	7
8			0.340	12.0	0.538	19.0	0.147	5.2	0.028	1.0	0.003	0.1	0.006	0.2	8
9			0.396	14.0	0.510	18.0	0.139	4.9	0.025	0.9	0.003	0.1	0.006	0.2	9
10			0.340	12.0	0.538	19.0	0.127	4.5	0.025	0.9	0.003	0.1	0.006	0.2	10
11			0.340	12.0	0.566	20.0	0.116	4.1	0.025	0.9	0.006	0.2	0.006	0.2	11
12			0.396	14.0	0.566	20.0	0.108	3.8	0.023	0.8	0.003	0.1	0.003	0.1	12
13			0.566	20.0	0.566	20.0	0.102	3.6	0.023	0.8	0.006	0.2	0.003	0.1	13
14			0.566	20.0	0.566	20.0	0.093	3.3	0.020	0.7	0.008	0.3	0.003	0.1	14
15			0.623	22.0	0.538	19.0	0.091	3.2	0.017	0.6	0.008	0.3	0.003	0.1	15
16			0.623	22.0	0.538	19.0	0.093	3.3	0.017	0.6	0.006	0.2	0.003	0.1	16
17			0.566	20.0	0.510	18.0	0.108	3.8	0.014	0.5	0.006	0.2	0.003	0.1	17
18			0.510	18.0	0.481	17.0	0.102	3.6	0.014	0.5	0.006	0.2	0.003	0.1	18
19			0.453	16.0	0.481	17.0	0.085	3.0	0.014	0.5	0.003	0.1	0.003	0.1	19
20			0.453	16.0	0.453	16.0	0.074	2.6	0.014	0.5	0.006	0.2	0.006	0.2	20
21			0.481	17.0	0.453	16.0	0.068	2.4	0.014	0.5	0.006	0.2	0.006	0.2	21
22			0.481	17.0	0.425	15.0	0.059	2.1	0.014	0.5	0.006	0.2	0.006	0.2	22
23			0.453	16.0	0.425	15.0	0.062	2.2	0.011	0.4	0.006	0.2	0.003	0.1	23
24			0.425	15.0	0.396	14.0	0.068	2.4	0.011	0.4	0.006	0.2	0.006	0.2	24
25			0.481	17.0	0.368	13.0	0.062	2.2	0.008	0.3	0.006	0.2	0.006	0.2	25
26			0.510	18.0	0.340	12.0	0.059	2.1	0.008	0.3	0.006	0.2	0.006	0.2	26
27			0.566	20.0	0.340	12.0	0.057	2.0	0.008	0.3	0.006	0.2	0.006	0.2	27
28			0.595	21.0	0.312	11.0	0.051	1.8	0.008	0.3	0.014	0.5	0.006	0.2	28
29			0.566	20.0	0.283	10.0	0.048	1.7	0.008	0.3	0.011	0.4	0.006	0.2	29
30			0.595	21.0	0.258	9.1	0.048	1.7	0.008	0.3	0.011	0.4	0.006	0.2	30
31					0.241	8.5			0.006	0.2	0.008	0.3			31
MEAN			0.435	15.4	0.475	16.8	0.111	3.9	0.021	0.7	0.006	0.2	0.005	0.2	MEAN
DAM^3			1126.		1271.		287.		55.		16.		12.		DAM^3
AC-FT				913.		1030.		233.		45.		13.		10.	AC-FT

SURPRISE VALLEY WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 47

NORTH DEEP CREEK ABOVE ALL DIVERSIONS

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.079	2.8	0.193	6.8	0.110	3.9	0.020	0.7	0.008	0.3	0.011	0.4	1
2			0.074	2.6	0.193	6.8	0.110	3.9	0.020	0.7	0.008	0.3	0.011	0.4	2
3			0.068	2.4	0.178	6.3	0.110	3.9	0.020	0.7	0.008	0.3	0.011	0.4	3
4			0.093	3.3	0.212	7.5	0.110	3.9	0.020	0.7	0.008	0.3	0.011	0.4	4
5			0.130	4.6	0.212	7.5	0.110	3.9	0.020	0.7	0.008	0.3	0.011	0.4	5
6			0.178	6.3	0.193	6.8	0.110	3.9	0.020	0.7	0.008	0.3	0.011	0.4	6
7			0.164	5.8	0.178	6.3	0.102	3.6	0.020	0.7	0.008	0.3	0.011	0.4	7
8			0.164	5.8	0.164	5.8	0.093	3.3	0.020	0.7	0.008	0.3	0.011	0.4	8
9			0.178	6.3	0.153	5.4	0.085	3.0	0.023	0.8	0.008	0.3	0.008	0.3	9
10			0.164	5.8	0.153	5.4	0.079	2.8	0.020	0.7	0.008	0.3	0.008	0.3	10
11			0.164	5.8	0.164	5.8	0.074	2.6	0.017	0.6	0.008	0.3	0.008	0.3	11
12			0.283	10.0	0.193	6.8	0.068	2.4	0.014	0.5	0.008	0.3	0.008	0.3	12
13			0.312	11.0	0.312	11.0	0.057	2.0	0.011	0.4	0.008	0.3	0.008	0.3	13
14			0.255	9.0	0.368	13.0	0.057	2.0	0.011	0.4	0.008	0.3	0.008	0.3	14
15			0.232	8.2	0.425	15.0	0.057	2.0	0.011	0.4	0.008	0.3	0.008	0.3	15
16			0.212	7.5	0.595	21.0	0.062	2.2	0.011	0.4	0.008	0.3	0.008	0.3	16
17			0.178	6.3	0.510	18.0	0.062	2.2	0.011	0.4	0.008	0.3	0.008	0.3	17
18			0.139	4.9	0.425	15.0	0.062	2.2	0.011	0.4	0.008	0.3	0.008	0.3	18
19			0.110	3.9	0.425	15.0	0.057	2.0	0.011	0.4	0.008	0.3	0.008	0.3	19
20			0.110	3.9	0.368	13.0	0.057	2.0	0.011	0.4	0.008	0.3	0.008	0.3	20
21			0.102	3.6	0.312	11.0	0.051	1.8	0.011	0.4	0.008	0.3	0.008	0.3	21
22			0.102	3.6	0.312	11.0	0.040	1.4	0.011	0.4	0.008	0.3	0.008	0.3	22
23			0.130	4.6	0.312	11.0	0.037	1.3	0.011	0.4	0.008	0.3	0.008	0.3	23
24			0.119	4.2	0.232	8.2	0.031	1.1	0.011	0.4	0.008	0.3	0.008	0.3	24
25			0.119	4.2	0.212	7.5	0.028	1.0	0.011	0.4	0.008	0.3	0.008	0.3	25
26			0.153	5.4	0.232	8.2	0.028	1.0	0.011	0.4	0.008	0.3	0.008	0.3	26
27			0.178	6.3	0.212	7.5	0.028	1.0	0.008	0.3	0.008	0.3	0.008	0.3	27
28			0.193	6.8	0.178	6.3	0.025	0.9	0.008	0.3	0.011	0.4	0.008	0.3	28
29			0.193	6.8	0.164	5.8	0.023	0.8	0.008	0.3	0.011	0.4	0.008	0.3	29
30			0.193	6.8	0.139	4.9	0.020	0.7	0.008	0.3	0.011	0.4	0.008	0.3	30
31					0.110	3.9			0.008	0.3	0.011	0.4			31
MEAN			0.159	5.6	0.259	9.1	0.065	2.3	0.014	0.5	0.009	0.3	0.009	0.3	MEAN
DAM^3			412.		693.		168.		37.		24.		24.		DAM^3
AC-FT				334.		562.		136.		30.		19.		19.	AC-FT

SURPRISE VALLEY WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 48

SOUTH DEEP CREEK BELOW NO. 2 DIVERSION

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.096	3.4	0.340	12.0	0.210	7.4	0.034	1.2	0.008	0.3	0.008	0.3	1
2			0.091	3.2	0.312	11.0	0.187	6.6	0.034	1.2	0.008	0.3	0.008	0.3	2
3			0.085	3.0	0.368	13.0	0.173	6.1	0.034	1.2	0.008	0.3	0.008	0.3	3
4			0.076	2.7	0.396	14.0	0.159	5.6	0.034	1.2	0.006	0.2	0.006	0.2	4
5			0.074	2.6	0.396	14.0	0.144	5.1	0.034	1.2	0.006	0.2	0.008	0.3	5
6			0.062	2.2	0.283	10.0	0.139	4.9	0.031	1.1	0.008	0.3	0.008	0.3	6
7			0.051	1.8	0.312	11.0	0.119	4.2	0.031	1.1	0.008	0.3	0.008	0.3	7
8			0.054	1.9	0.340	12.0	0.088	3.1	0.028	1.0	0.008	0.3	0.006	0.2	8
9			0.068	2.4	0.340	12.0	0.071	2.5	0.028	1.0	0.008	0.3	0.006	0.2	9
10			0.054	1.9	0.340	12.0	0.062	2.2	0.028	1.0	0.006	0.2	0.006	0.2	10
11			0.054	1.9	0.340	12.0	0.057	2.0	0.025	0.9	0.008	0.3	0.008	0.3	11
12			0.068	2.4	0.396	14.0	0.057	2.0	0.025	0.9	0.008	0.3	0.006	0.2	12
13			0.093	3.3	0.453	16.0	0.057	2.0	0.025	0.9	0.011	0.4	0.006	0.2	13
14			0.136	4.8	0.510	18.0	0.057	2.0	0.025	0.9	0.020	0.7	0.008	0.3	14
15			0.198	7.0	0.538	19.0	0.051	1.8	0.023	0.8	0.017	0.6	0.008	0.3	15
16			0.312	11.0	0.538	19.0	0.062	2.2	0.023	0.8	0.011	0.4	0.008	0.3	16
17			0.312	11.0	0.481	17.0	0.065	2.3	0.020	0.7	0.008	0.3	0.008	0.3	17
18			0.241	8.5	0.481	17.0	0.065	2.3	0.017	0.6	0.008	0.3	0.008	0.3	18
19			0.198	7.0	0.453	16.0	0.065	2.3	0.011	0.4	0.006	0.2	0.008	0.3	19
20			0.187	6.6	0.453	16.0	0.062	2.2	0.008	0.3	0.008	0.3	0.008	0.3	20
21			0.198	7.0	0.396	14.0	0.057	2.0	0.017	0.6	0.008	0.3	0.008	0.3	21
22			0.210	7.4	0.396	14.0	0.057	2.0	0.014	0.5	0.008	0.3	0.008	0.3	22
23			0.198	7.0	0.396	14.0	0.051	1.8	0.011	0.4	0.011	0.4	0.008	0.3	23
24			0.198	7.0	0.396	14.0	0.045	1.6	0.008	0.3	0.011	0.4	0.008	0.3	24
25			0.210	7.4	0.340	12.0	0.045	1.6	0.011	0.4	0.008	0.3	0.008	0.3	25
26			0.252	8.9	0.312	11.0	0.040	1.4	0.008	0.3	0.008	0.3	0.008	0.3	26
27			0.283	10.0	0.312	11.0	0.045	1.6	0.008	0.3	0.008	0.3	0.008	0.3	27
28			0.312	11.0	0.283	10.0	0.040	1.4	0.008	0.3	0.014	0.5	0.008	0.3	28
29			0.312	11.0	0.278	9.8	0.040	1.4	0.008	0.3	0.014	0.5	0.008	0.3	29
30			0.312	11.0	0.241	8.5	0.034	1.2	0.008	0.3	0.008	0.3	0.006	0.2	30
31					0.252	8.9			0.008	0.3	0.008	0.3			31
MEAN			0.166	5.9	0.377	13.3	0.080	2.8	0.020	0.7	0.010	0.3	0.008	0.3	MEAN
DAM^3			431.		1008.		207.		55.		25.		20.		DAM^3
AC-FT				349.		817.		168.		44.		21.		16.	AC-FT

SURPRISE VALLEY WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 49

COTTONWOOD CREEK FLUME BELOW PAGE DITCH

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.062	2.2	0.312	11.0	0.736	26.0	0.249	8.8	0.028	1.0	0.023	0.8	1
2			0.057	2.0	0.340	12.0	0.821	29.0	0.238	8.4	0.023	0.8	0.020	0.7	2
3			0.051	1.8	0.368	13.0	0.906	32.0	0.198	7.0	0.028	1.0	0.020	0.7	3
4			0.062	2.2	0.368	13.0	1.048	37.0	0.164	5.8	0.028	1.0	0.020	0.7	4
5			0.113	4.0	0.453	16.0	1.359	48.0	0.139	4.9	0.028	1.0	0.017	0.6	5
6			0.147	5.2	0.396	14.0	1.359	48.0	0.122	4.3	0.028	1.0	0.017	0.6	6
7			0.130	4.6	0.396	14.0	1.020	36.0	0.113	4.0	0.023	0.8	0.017	0.6	7
8			0.130	4.6	0.368	13.0	0.821	29.0	0.102	3.6	0.023	0.8	0.017	0.6	8
9			0.042	1.5	0.340	12.0	0.793	28.0	0.108	3.8	0.023	0.8	0.017	0.6	9
10			0.057	2.0	0.368	13.0	0.708	25.0	0.108	3.8	0.023	0.8	0.017	0.6	10
11			0.088	3.1	0.396	14.0	0.708	25.0	0.108	3.8	0.020	0.7	0.017	0.6	11
12			0.045	1.6	0.453	16.0	0.736	26.0	0.102	3.6	0.011	0.4	0.017	0.6	12
13			0.042	1.5	0.481	17.0	0.680	24.0	0.102	3.6	0.034	1.2	0.017	0.6	13
14			0.088	3.1	0.566	20.0	0.566	20.0	0.102	3.6	0.037	1.3	0.017	0.6	14
15			0.261	9.2	0.481	17.0	0.510	18.0	0.093	3.3	0.034	1.2	0.017	0.6	15
16			0.249	8.8	0.510	18.0	0.481	17.0	0.093	3.3	0.020	0.7	0.017	0.6	16
17			0.190	6.7	0.510	18.0	0.425	15.0	0.088	3.1	0.014	0.5	0.017	0.6	17
18			0.181	6.4	0.538	19.0	0.396	14.0	0.082	2.9	0.014	0.5	0.014	0.5	18
19			0.156	5.5	0.566	20.0	0.396	14.0	0.076	2.7	0.020	0.7	0.014	0.5	19
20			0.147	5.2	0.566	20.0	0.368	13.0	0.062	2.2	0.042	1.5	0.011	0.4	20
21			0.164	5.8	0.595	21.0	0.368	13.0	0.071	2.5	0.037	1.3	0.006	0.2	21
22			0.130	4.6	0.623	22.0	0.368	13.0	0.062	2.2	0.028	1.0	0.006	0.2	22
23			0.164	5.8	0.651	23.0	0.340	12.0	0.062	2.2	0.020	0.7	0.006	0.2	23
24			0.156	5.5	0.651	23.0	0.340	12.0	0.057	2.0	0.020	0.7	0.006	0.2	24
25			0.190	6.7	0.680	24.0	0.340	12.0	0.045	1.6	0.014	0.5	0.014	0.5	25
26			0.224	7.9	0.708	25.0	0.340	12.0	0.045	1.6	0.014	0.5	0.014	0.5	26
27			0.232	8.2	0.708	25.0	0.312	11.0	0.045	1.6	0.020	0.7	0.014	0.5	27
28			0.241	8.5	0.736	26.0	0.312	11.0	0.042	1.5	0.122	4.3	0.014	0.5	28
29			0.249	8.8	0.736	26.0	0.275	9.7	0.042	1.5	0.045	1.6	0.011	0.4	29
30			0.258	9.1	0.736	26.0	0.275	9.7	0.037	1.3	0.042	1.5	0.011	0.4	30
31					0.765	27.0			0.034	1.2	0.028	1.0			31
MEAN			0.144	5.1	0.528	18.6	0.604	21.3	0.097	3.4	0.029	1.0	0.015	0.5	MEAN
DAM^3			372.		1413.		1563.		258.		77.		38.		DAM^3
AC-FT				302.		1146.		1267.		210.		62.		31.	AC-FT

SURPRISE VALLEY WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 50

OWL CREEK BELOW ALLEN-ARRECHE DITCH

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.164	5.8	0.396	14.0	0.878	31.0	0.340	12.0	0.045	1.6	0.031	1.1	1
2			0.153	5.4	0.425	15.0	0.793	28.0	0.312	11.0	0.042	1.5	0.031	1.1	2
3			0.142	5.0	0.538	19.0	0.963	34.0	0.283	10.0	0.042	1.5	0.031	1.1	3
4			0.164	5.8	0.538	19.0	1.586	56.0	0.258	9.1	0.040	1.4	0.028	1.0	4
5			0.221	7.8	0.566	20.0	1.699	60.0	0.246	8.7	0.040	1.4	0.028	1.0	5
6			0.258	9.1	0.566	20.0	1.586	56.0	0.246	8.7	0.037	1.3	0.028	1.0	6
7			0.235	8.3	0.595	21.0	1.246	44.0	0.269	9.5	0.037	1.3	0.028	1.0	7
8			0.235	8.3	0.623	22.0	1.104	39.0	0.198	7.0	0.034	1.2	0.028	1.0	8
9			0.221	7.8	0.623	22.0	1.020	36.0	0.198	7.0	0.034	1.2	0.028	1.0	9
10			0.187	6.6	0.595	21.0	0.991	35.0	0.164	5.8	0.037	1.3	0.028	1.0	10
11			0.198	7.0	0.623	22.0	0.991	35.0	0.164	5.8	0.040	1.4	0.025	0.9	11
12			0.221	7.8	0.736	26.0	0.991	35.0	0.164	5.8	0.042	1.5	0.025	0.9	12
13			0.246	8.7	0.793	28.0	0.850	30.0	0.164	5.8	0.045	1.6	0.025	0.9	13
14			0.246	8.7	0.821	29.0	0.821	29.0	0.142	5.0	0.042	1.5	0.025	0.9	14
15			0.258	9.1	0.821	29.0	0.793	28.0	0.133	4.7	0.042	1.5	0.025	0.9	15
16			0.258	9.1	0.991	35.0	0.765	27.0	0.133	4.7	0.040	1.4	0.025	0.9	16
17			0.235	8.3	0.906	32.0	0.708	25.0	0.122	4.3	0.037	1.3	0.025	0.9	17
18			0.198	7.0	0.595	21.0	0.623	22.0	0.099	3.5	0.034	1.2	0.025	0.9	18
19			0.198	7.0	0.623	22.0	0.566	20.0	0.110	3.9	0.034	1.2	0.025	0.9	19
20			0.235	8.3	0.765	27.0	0.510	18.0	0.110	3.9	0.031	1.1	0.025	0.9	20
21			0.258	9.1	0.651	23.0	0.566	20.0	0.110	3.9	0.031	1.1	0.025	0.9	21
22			0.269	9.5	1.048	37.0	0.538	19.0	0.110	3.9	0.034	1.2	0.025	0.9	22
23			0.258	9.1	1.501	53.0	0.510	18.0	0.099	3.5	0.034	1.2	0.025	0.9	23
24			0.258	9.1	1.473	52.0	0.510	18.0	0.071	2.5	0.037	1.3	0.025	0.9	24
25			0.280	9.9	1.388	49.0	0.510	18.0	0.068	2.4	0.037	1.3	0.028	1.0	25
26			0.312	11.0	1.416	50.0	0.481	17.0	0.065	2.3	0.040	1.4	0.028	1.0	26
27			0.340	12.0	0.963	34.0	0.453	16.0	0.062	2.2	0.040	1.4	0.025	0.9	27
28			0.368	13.0	0.963	34.0	0.425	15.0	0.057	2.0	0.071	2.5	0.025	0.9	28
29			0.368	13.0	0.935	33.0	0.396	14.0	0.054	1.9	0.045	1.6	0.025	0.9	29
30			0.396	14.0	0.793	28.0	0.340	12.0	0.051	1.8	0.040	1.4	0.023	0.8	30
31					0.765	27.0			0.048	1.7	0.034	1.2			31
MEAN			0.246	8.7	0.808	28.5	0.807	28.5	0.150	5.3	0.039	1.4	0.027	0.9	MEAN
DAM^3			637.		2162.		2091.		402.		105.		69.		DAM^3
AC-FT				517.		1752.		1695.		326.		85.		56.	AC-FT

SURPRISE VALLEY WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 51

RADAR CREEK ABOVE ALL DIVERSIONS

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.085	3.0	0.261	9.2	0.821	29.0	0.184	6.5	0.054	1.9	0.042	1.5	1
2			0.088	3.1	0.261	9.2	0.793	28.0	0.176	6.2	0.051	1.8	0.037	1.3	2
3			0.091	3.2	0.283	10.0	0.765	27.0	0.159	5.6	0.051	1.8	0.042	1.5	3
4			0.091	3.2	0.283	10.0	0.736	26.0	0.147	5.2	0.048	1.7	0.042	1.5	4
5			0.093	3.3	0.283	10.0	0.935	33.0	0.139	4.9	0.051	1.8	0.042	1.5	5
6			0.096	3.4	0.312	11.0	0.935	33.0	0.130	4.6	0.051	1.8	0.037	1.3	6
7			0.099	3.5	0.312	11.0	0.821	29.0	0.130	4.6	0.048	1.7	0.037	1.3	7
8			0.099	3.5	0.340	12.0	0.680	24.0	0.130	4.6	0.048	1.7	0.037	1.3	8
9			0.102	3.6	0.340	12.0	0.566	20.0	0.125	4.4	0.048	1.7	0.028	1.0	9
10			0.096	3.4	0.368	13.0	0.566	20.0	0.116	4.1	0.048	1.7	0.023	0.8	10
11			0.102	3.6	0.396	14.0	0.538	19.0	0.116	4.1	0.048	1.7	0.028	1.0	11
12			0.102	3.6	0.425	15.0	0.510	18.0	0.108	3.8	0.042	1.5	0.023	0.8	12
13			0.108	3.8	0.481	17.0	0.510	18.0	0.102	3.6	0.048	1.7	0.023	0.8	13
14			0.130	4.6	0.396	14.0	0.481	17.0	0.099	3.5	0.051	1.8	0.011	0.4	14
15			0.167	5.9	0.425	15.0	0.425	15.0	0.096	3.4	0.051	1.8	0.011	0.4	15
16			0.176	6.2	0.481	17.0	0.368	13.0	0.096	3.4	0.048	1.7	0.011	0.4	16
17			0.167	5.9	0.623	22.0	0.340	12.0	0.093	3.3	0.037	1.3	0.011	0.4	17
18			0.142	5.0	0.708	25.0	0.312	11.0	0.093	3.3	0.031	1.1	0.011	0.4	18
19			0.139	4.9	0.736	26.0	0.283	10.0	0.091	3.2	0.031	1.1	0.017	0.6	19
20			0.130	4.6	0.793	28.0	0.283	10.0	0.088	3.1	0.042	1.5	0.017	0.6	20
21			0.139	4.9	0.821	29.0	0.261	9.2	0.088	3.1	0.048	1.7	0.017	0.6	21
22			0.139	4.9	0.850	30.0	0.261	9.2	0.085	3.0	0.042	1.5	0.017	0.6	22
23			0.130	4.6	0.878	31.0	0.261	9.2	0.085	3.0	0.042	1.5	0.017	0.6	23
24			0.130	4.6	0.906	32.0	0.261	9.2	0.082	2.9	0.037	1.3	0.017	0.6	24
25			0.130	4.6	0.935	33.0	0.246	8.7	0.079	2.8	0.025	0.9	0.023	0.8	25
26			0.147	5.2	0.963	34.0	0.232	8.2	0.074	2.6	0.025	0.9	0.028	1.0	26
27			0.159	5.6	0.963	34.0	0.232	8.2	0.071	2.5	0.020	0.7	0.028	1.0	27
28			0.193	6.8	0.963	34.0	0.221	7.8	0.068	2.4	0.057	2.0	0.023	0.8	28
29			0.212	7.5	0.935	33.0	0.212	7.5	0.065	2.3	0.057	2.0	0.023	0.8	29
30			0.261	9.2	0.878	31.0	0.193	6.8	0.062	2.2	0.051	1.8	0.023	0.8	30
31					0.850	30.0			0.057	2.0	0.048	1.7			31
MEAN			0.131	4.6	0.595	21.0	0.468	16.5	0.104	3.7	0.045	1.6	0.025	0.9	MEAN
DAM^3			340.		1593.		1213.		279.		119.		65.		DAM^3
AC-FT				276.		1291.		983.		226.		97.		52.	AC-FT

SURPRISE VALLEY WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 52

EAGLE CREEK NEAR EAGLEVILLE

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.093	3.3	0.312	11.0	0.623	22.0	0.312	11.0	0.082	2.9	0.031	1.1	1
2			0.091	3.2	0.283	10.0	0.651	23.0	0.312	11.0	0.079	2.8	0.031	1.1	2
3			0.088	3.1	0.340	12.0	0.708	25.0	0.283	10.0	0.076	2.7	0.028	1.0	3
4			0.093	3.3	0.396	14.0	0.793	28.0	0.283	10.0	0.074	2.6	0.031	1.1	4
5			0.116	4.1	0.340	12.0	0.878	31.0	0.275	9.7	0.071	2.5	0.028	1.0	5
6			0.122	4.3	0.283	10.0	0.850	30.0	0.258	9.1	0.068	2.4	0.031	1.1	6
7			0.113	4.0	0.266	9.4	0.765	27.0	0.241	8.5	0.065	2.3	0.025	0.9	7
8			0.125	4.4	0.244	8.6	0.680	24.0	0.224	7.9	0.062	2.2	0.023	0.8	8
9			0.127	4.5	0.221	7.8	0.651	23.0	0.215	7.6	0.062	2.2	0.023	0.8	9
10			0.113	4.0	0.224	7.9	0.623	22.0	0.215	7.6	0.059	2.1	0.023	0.8	10
11			0.110	3.9	0.252	8.9	0.651	23.0	0.210	7.4	0.057	2.0	0.023	0.8	11
12			0.110	3.9	0.312	11.0	0.680	24.0	0.204	7.2	0.057	2.0	0.023	0.8	12
13			0.127	4.5	0.425	15.0	0.680	24.0	0.195	6.9	0.065	2.3	0.023	0.8	13
14			0.153	5.4	0.566	20.0	0.623	22.0	0.184	6.5	0.065	2.3	0.025	0.9	14
15			0.193	6.8	0.708	25.0	0.595	21.0	0.173	6.1	0.057	2.0	0.025	0.9	15
16			0.198	7.0	0.765	27.0	0.595	21.0	0.164	5.8	0.054	1.9	0.025	0.9	16
17			0.173	6.1	0.736	26.0	0.538	19.0	0.144	5.1	0.051	1.8	0.025	0.9	17
18			0.147	5.2	0.765	27.0	0.510	18.0	0.130	4.6	0.042	1.5	0.025	0.9	18
19			0.133	4.7	0.765	27.0	0.481	17.0	0.127	4.5	0.040	1.4	0.031	1.1	19
20			0.133	4.7	0.821	29.0	0.453	16.0	0.125	4.4	0.051	1.8	0.028	1.0	20
21			0.144	5.1	0.906	32.0	0.453	16.0	0.127	4.5	0.054	1.9	0.028	1.0	21
22			0.142	5.0	1.020	36.0	0.425	15.0	0.125	4.4	0.042	1.5	0.028	1.0	22
23			0.133	4.7	0.963	34.0	0.425	15.0	0.116	4.1	0.040	1.4	0.028	1.0	23
24			0.130	4.6	0.906	32.0	0.396	14.0	0.110	3.9	0.037	1.3	0.028	1.0	24
25			0.142	5.0	0.878	31.0	0.368	13.0	0.102	3.6	0.034	1.2	0.031	1.1	25
26			0.170	6.0	0.935	33.0	0.368	13.0	0.099	3.5	0.031	1.1	0.028	1.0	26
27			0.232	8.2	0.906	32.0	0.340	12.0	0.096	3.4	0.031	1.1	0.028	1.0	27
28			0.249	8.8	0.793	28.0	0.340	12.0	0.093	3.3	0.062	2.2	0.025	0.9	28
29			0.278	9.8	0.708	25.0	0.340	12.0	0.091	3.2	0.051	1.8	0.025	0.9	29
30			0.312	11.0	0.651	23.0	0.312	11.0	0.088	3.1	0.048	1.7	0.025	0.9	30
31					0.623	22.0			0.082	2.9	0.040	1.4			31
MEAN			0.150	5.3	0.591	20.9	0.560	19.8	0.174	6.2	0.055	1.9	0.027	1.0	MEAN
DAM^3			388.		1581.		1450.		467.		147.		70.		DAM^3
AC-FT				314.		1282.		1176.		378.		120.		56.	AC-FT

SURPRISE VALLEY WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 53

EMERSON CREEK ABOVE ALL DIVERSIONS

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.102	3.6	0.232	8.2	0.340	12.0	0.096	3.4	0.045	1.6	0.042	1.5	1
2			0.096	3.4	0.235	8.3	0.340	12.0	0.096	3.4	0.045	1.6	0.042	1.5	2
3			0.093	3.3	0.244	8.6	0.312	11.0	0.091	3.2	0.045	1.6	0.042	1.5	3
4			0.099	3.5	0.244	8.6	0.312	11.0	0.085	3.0	0.042	1.5	0.042	1.5	4
5			0.116	4.1	0.244	8.6	0.283	10.0	0.082	2.9	0.042	1.5	0.040	1.4	5
6			0.130	4.6	0.244	8.6	0.283	10.0	0.082	2.9	0.042	1.5	0.040	1.4	6
7			0.130	4.6	0.252	8.9	0.275	9.7	0.082	2.9	0.042	1.5	0.037	1.3	7
8			0.136	4.8	0.255	9.0	0.249	8.8	0.076	2.7	0.042	1.5	0.037	1.3	8
9			0.153	5.4	0.255	9.0	0.229	8.1	0.074	2.6	0.042	1.5	0.037	1.3	9
10			0.139	4.9	0.252	8.9	0.210	7.4	0.074	2.6	0.042	1.5	0.037	1.3	10
11			0.147	5.2	0.244	8.6	0.204	7.2	0.074	2.6	0.042	1.5	0.037	1.3	11
12			0.144	5.1	0.244	8.6	0.190	6.7	0.074	2.6	0.042	1.5	0.037	1.3	12
13			0.161	5.7	0.238	8.4	0.176	6.2	0.071	2.5	0.048	1.7	0.037	1.3	13
14			0.184	6.5	0.238	8.4	0.167	5.9	0.071	2.5	0.051	1.8	0.037	1.3	14
15			0.215	7.6	0.235	8.3	0.159	5.6	0.068	2.4	0.045	1.6	0.034	1.2	15
16			0.201	7.1	0.396	14.0	0.170	6.0	0.065	2.3	0.042	1.5	0.034	1.2	16
17			0.198	7.0	0.765	27.0	0.198	7.0	0.062	2.2	0.040	1.4	0.034	1.2	17
18			0.198	7.0	0.708	25.0	0.190	6.7	0.059	2.1	0.040	1.4	0.034	1.2	18
19			0.201	7.1	0.736	26.0	0.164	5.8	0.059	2.1	0.040	1.4	0.037	1.3	19
20			0.210	7.4	0.821	29.0	0.153	5.4	0.059	2.1	0.045	1.6	0.034	1.2	20
21			0.210	7.4	0.963	34.0	0.139	4.9	0.065	2.3	0.048	1.7	0.034	1.2	21
22			0.210	7.4	1.048	37.0	0.127	4.5	0.062	2.2	0.042	1.5	0.034	1.2	22
23			0.210	7.4	0.991	35.0	0.125	4.4	0.057	2.0	0.040	1.4	0.034	1.2	23
24			0.218	7.7	0.850	30.0	0.116	4.1	0.054	1.9	0.040	1.4	0.034	1.2	24
25			0.221	7.8	0.736	26.0	0.113	4.0	0.051	1.8	0.040	1.4	0.037	1.3	25
26			0.221	7.8	0.708	25.0	0.108	3.8	0.051	1.8	0.040	1.4	0.037	1.3	26
27			0.221	7.8	0.680	24.0	0.108	3.8	0.051	1.8	0.040	1.4	0.037	1.3	27
28			0.227	8.0	0.595	21.0	0.105	3.7	0.051	1.8	0.059	2.1	0.034	1.2	28
29			0.232	8.2	0.510	18.0	0.099	3.5	0.048	1.7	0.054	1.9	0.034	1.2	29
30			0.232	8.2	0.425	15.0	0.102	3.6	0.048	1.7	0.051	1.8	0.034	1.2	30
31					0.368	13.0			0.045	1.6	0.048	1.7			31
MEAN			0.175	6.2	0.482	17.0	0.191	6.8	0.067	2.4	0.044	1.6	0.037	1.3	MEAN
DAM^3			454.		1291.		496.		180.		118.		95.		DAM^3
AC-FT				368.		1047.		402.		146.		96.		77.	AC-FT

Although the Owl Creek Flood Control and Water Conservation District did not become official until August 7, 1961, the District's diversion and distribution project was completed in February 1961. The project reduced the number of diversions from 17 to 2 and the number of ditches from 17 to 8. This makes distribution easier and more equitable. The users say that they receive twice as much water as they did before the project. It is possible to divert and distribute 2.26 m^3/s (80 ft^3/s) in the lower seven ditches.

1979 Distribution

Watermaster service began in Surprise Valley area on March 19 and continued until September 30. Keithal B. Dick, Water Resources Technician II, was watermaster during this period.

The water supply in the service area was below average during the season.

Bidwell Creek. Total stream runoff available from April 1 through September 30 was 11 640 dam^3 (9,427 ac-ft). There was enough to satisfy all users until June 25, 0.57 m^3/s (20 ft^3/s), which was 46 percent first priorities. When Schedule 4 became effective on July 10, there was 0.21 m^3/s (7.5 ft^3/s) in Bidwell Creek above all diversions, which filled the first and 28 percent of second priorities. On September 30, there was 0.08 m^3/s (2.9 ft^3/s), which filled 75 percent of first priorities.

Mill Creek. Total stream runoff available on April 1 through September 30 was 6 673 dam^3 (5,410 ac-ft). All of first and second were satisfied, and 40 percent of third priorities were filled by the middle of April. The flow increased to supply 60 percent of third priority for a short period in the middle of July, then with a steady decrease by the end of July to 50 percent of second priorities. By the September 10, flow had decreased to 70 percent of first priorities. At the end of the season, the flow had decreased to 100 percent of first priorities.

Soldier Creek. Total stream runoff available on March 19 through September 30 was 5 280 dam^3 (4,280 ac-ft). There was available water to third priorities at the start of the season for lower users. By May 17, flow reached the peak at the time of start of upper rotation 100 percent of all priorities, with surplus to lower users in the east channel. On June 19, the end of rotation period, flow had decreased to supply 100 percent of second priorities. Flow decreased to 100 percent of first priorities by July 13 and to 25 percent of first priorities at the end of September.

Pine Creek. Total stream runoff available on March 20 through September 30 was 1 840 dam^3 (1,492 ac-ft). The first rotation lasted from March 20 to April 7. The second rotation was satisfied on April 16. Rotation period ended May 22. Flow ended about June 28 above all diversions.

Cedar Creek. Total stream runoff available April 1 through September 30 was 2 770 dam^3 (2,245 ac-ft). There was 0.20 m^3/s (7 ft^3/s) on April 1, which was 16 percent of second priorities. May 1 flow filled 100 percent of first and second priorities, and reached 100 percent third priorities by May 15. Flows decreased to near no flow by September 30. Thomes Creek water was diverted to Cedar Creek in April and May.

Deep Creek. Total stream runoff available April 1 through September 30 was 3 110 dam^3 (2,520 ac-ft). The flow in North Deep on April 1 was 32 percent of first priority and reached 240 percent of first on May 16. The flow reached 100 percent of first priority on May 23, decreasing to 3 percent on September 30. South Deep was 63 percent of first on April 1, and reached to 37 percent of fifth priorities on May 15.

Flow decreased 100 percent of first priority on June 4 and to 100 percent of first on September 30.

Cottonwood Creek. Total runoff available April 1 through September 30 was 3 720 dam^3 (3,020 ac-ft). There was 0.07 m^3/s (2.2 ft^3/s) flow on April 1. Rotation started May 16 with 0.51 m^3/s (18 ft^3/s) and ended July 2 with 0.24 m^3/s (8.4 ft^3/s). The remainder of the season flow was divided 20 percent to Cockrell and 80 percent to Sandhill Ditch. On September 30, the flow had decreased to 0.01 m^3/s (0.4 ft^3/s).

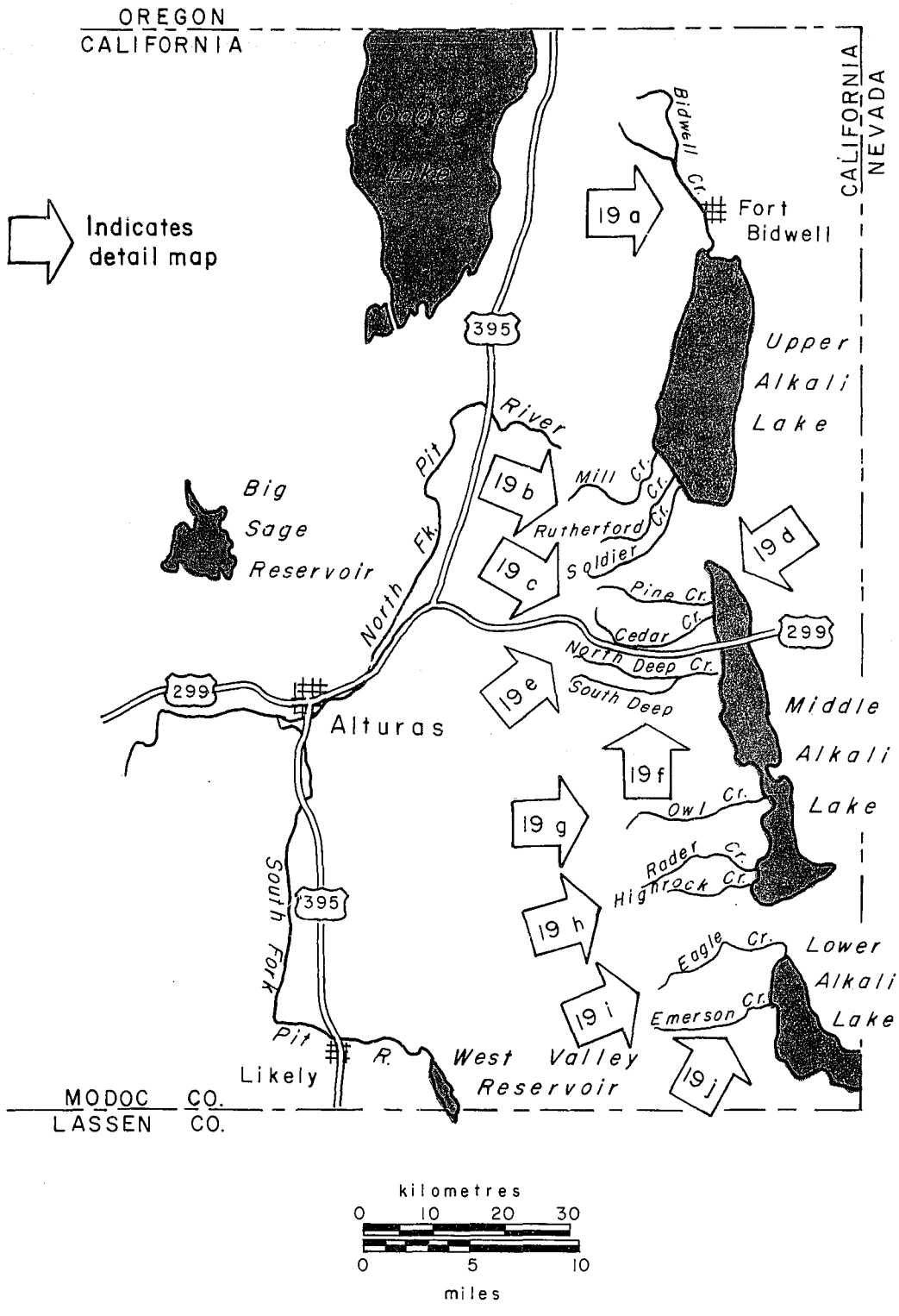
Owl Creek. Total stream runoff available April 1 through September 30 was 5 460 dam^3 (4,430 ac-ft). Maximum flow occurred on June 5, filling all 21 priorities to 150 percent plus flow in Snake Ditch from June 3 to June 12. The flow decreased to 100 percent of first priority on July 26 and remained a portion of first priority until September 30.

Rader Creek. Total stream runoff available April 1 through September 30 was 3 610 dam^3 (2,930 ac-ft). The water supply on April 1 was about 0.08 m^3/s (3 ft^3/s), which filled first and second priorities and 10 percent of third. The water supply peaked on May 26, then decreased to 67 percent of first priorities on September 30.

Eagle Creek. Total stream runoff available April 1 through September 30 was 4 110 dam^3 (3,329 ac-ft). The April 1 flow started filling first priority and by May 1, was filling 52 percent of second priority. May 23 flow reached 100 percent of all four priorities and decreased to 30 percent of first priority on September 30.

Emerson Creek. Total stream runoff available April 1 through September 30 was 2 630 dam^3 (2,136 ac-ft). The flow was filling first and 60 percent of second by May 1, and full 100 percent of all four priorities was filled on May 21. Flows receded to 60 percent of first priority on September 30.

Figure 19



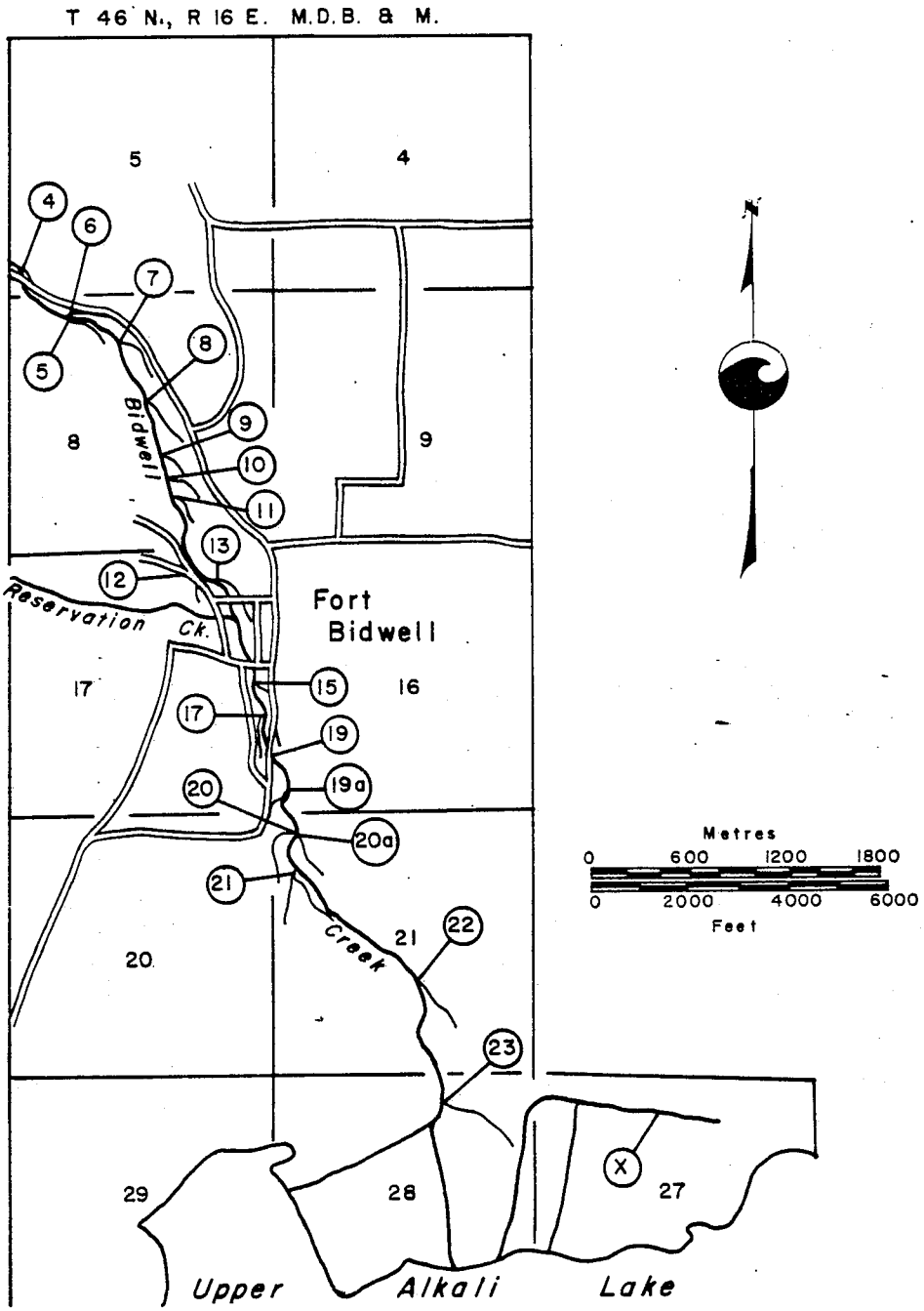
INDEX MAP
SURPRISE VALLEY
WATERMASTER SERVICE AREA

Diversion Number	Name	March 15 to July 9		July 10 to Sept 30	
		m^3/s	ft^3/s	m^3/s	ft^3/s
4	R. Garnner	0.133	4.71	0.133	4.7111
5	G. Peterson	0.011	0.38	0.010	0.35
	C. Bucher	0.013	0.45	0.010	0.35
	J. Moore	0.002	0.07	0.002	0.07
6	J. Moore	0.005	0.18	0.005	0.18
7	G. Peterson	0.014	0.50	0.011	0.40 1/
8	R. Garnner	0.205	7.25	0.205	7.25
	Town Users	0.002	0.05	0.002	0.05
9	J. McAuliffe	0.216	7.63	0.216	7.63
	Town Users	0.006	0.22	0.005	0.17
10	F. Carey	0.174	6.13	0.174	6.13 2/
	C. Bucher	0.020	0.70	0.020	0.70 2/
	P. Peterson	0.013	0.44	0.013	0.44
	Town Users	0.007	0.26	0.007	0.26
11	C. Bucher	0.011	0.38	1/	1/
12	U. S. Indian Service	0.013	0.46	0.006	0.20 3/
	Town Users	0.007	0.26	0.007	0.26
13	Fee Ranch Inc.	0.148	5.24	0.148	5.24
	Town Users	0.013	0.44	0.013	0.44
15	Fee Ranch Inc.	0.253	8.94	0.253	8.94 2/
	L. Sagehorn	0.140	4.94	0.140	4.94 2/
	J. O'Callaghan	0.082	2.88	0.082	2.88 2/
	G. Toney	0.012	0.42	0.012	0.42 2/
	Town Users	0.001	0.03	0.001	0.03
17	E. Kober	0.002	0.05	0.002	0.05
19	Cockrells Inc.	0.121	4.26	0.121	4.26
20	L. Sagehorn	0.031	1.10	0.031	1.10 2/
	F. Carey	0.027	0.95	0.027	0.95 2/
21	L. Sagehorn	0.039	1.39	0.039	1.39
	F. Carey	0.014	0.48	0.014	0.48
22	J. O'Callaghan	0.011	0.38	0.011	0.38
23	L. Sagehorn	0.051	1.79	0.051	1.79
XX	L. Sagehorn	4/	4/	4/	4/

1/ Two 36 hour periods of 0.057 m^3/s (2.00 ft^3/s).
2/ Includes 0.003 m^3/s (0.10 ft^3/s) stockwater right not to be diverted from creek.
3/ Reservation Creek - U. S. Indian Service entire flow.
4/ If flow is less than 0.108 m^3/s (3.82 ft^3/s) deficiency is made up by additional diversions through (15) if Fee Ranch Inc. allotment is satisfied.

NOTE: Diversions 1, 2, 3 are not shown as they are not part of the watermaster service area.

Figure 19a

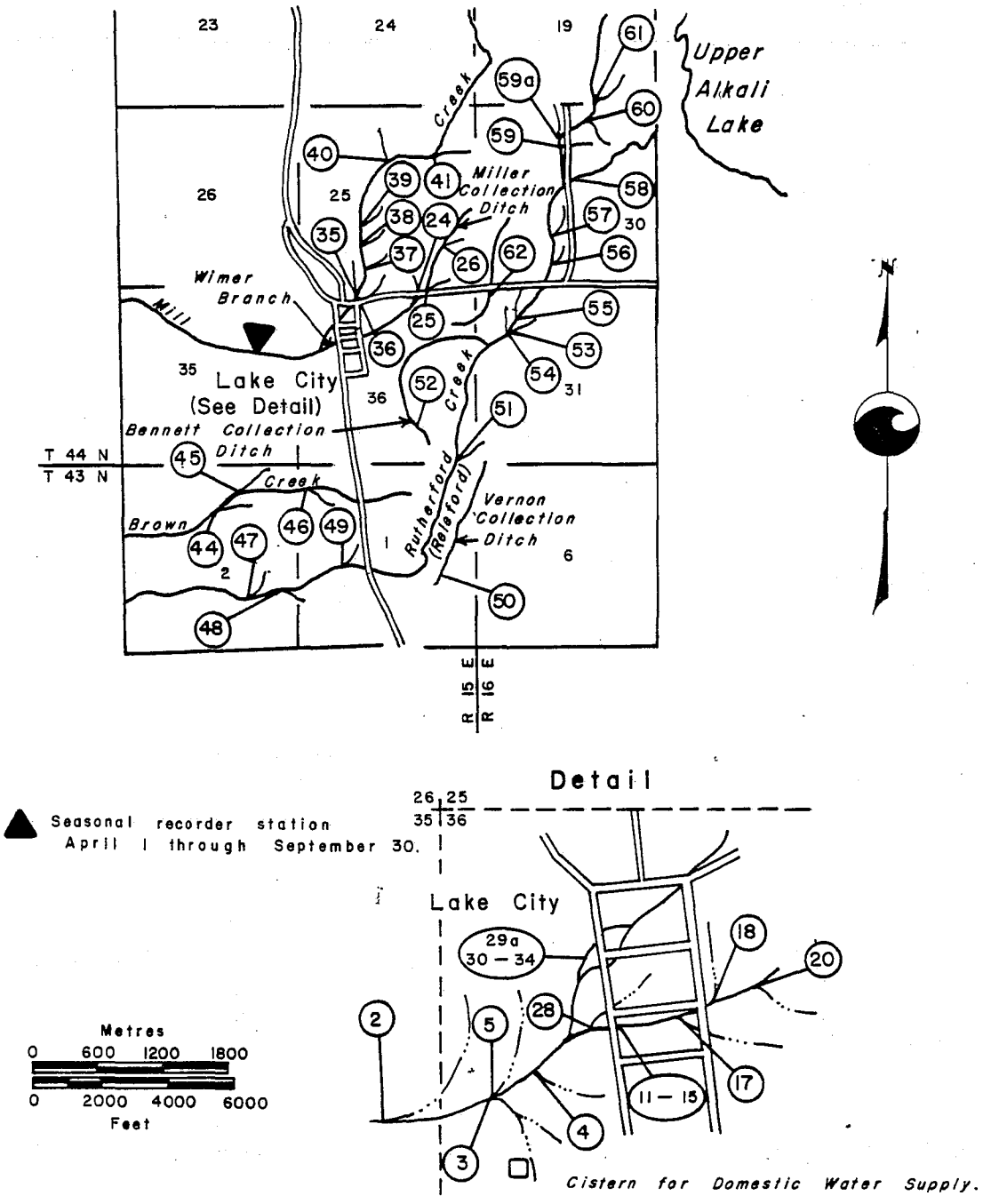


DIVERSIONS FROM BIDWELL CREEK
SURPRISE VALLEY WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
2	C. Dixon	0.011	0.38
	H. Smith	0.007	0.24
3	N. Bettendorff	0.039	1.36
	R. McDaniels	0.004	0.13
	Domestic Users	0.002	0.06
4	R. Dreyer	0.002	0.07
	J. Fogerty	0.007	0.25
	M. Larson	0.007	0.26
5	C. Dixon	0.005	0.18
11-13,15,28	Town Users	0.054	1.92
17	N. Bettendorff	0.057	2.01
18	Town Users	0.009	0.33
20	V. Wimer	0.052	1.85
24	T. Dunton	0.041	1.45
26	E. Darst	0.052	1.85
29A,30-34	Town Users	0.046	1.63
Channel	Cockrells Inc.	0.292	10.30
Channel	G. W. Warrens	0.052	1.85
44-46	W. Gorzell	0.023	0.80
47	M. Toney	0.0003	0.01
	W. Gorzell	0.016	0.575
	C. Gorzell	0.008	0.275
	N. Bettendorff	0.009	0.30
48	F. Hedgpeth	0.017	0.60
48-49	R. Page	0.047	1.65
54	Cockrells Inc.	0.011	0.40
55-57	Cockrells Inc.	0.021	0.75[1/]
58	Cockrells Inc.	0.003	0.10[1/]
58-59	W. Odbert	0.026	0.90[1/]
59A	Cockrells Inc.	0.010	0.35[1/]
61	L. Huntsman	0.018	0.65
62	S. Burger	0.047	1.65[2/]
[3/]	Cockrells Inc.	0.020	0.70

1/ Water derived from Hay Collecting Ditch to be deducted from decreed amount of direct diversion from Rutherford Creek.
2/ Not under Watermaster Report.
3/ Channel of Rutherford Creek.

Figure 19h



DIVERSIONS FROM MILL CREEK, BROWN CREEK, AND RUTHERFORD (RELEFORD) CREEK SURPRISE VALLEY WATERMASTER SERVICE AREA

Diversion Number	Name	Decreed Right m^3/s	Decreed Right ft^3/s	Appropriative Right m^3/s	Appropriative Right ft^3/s
1	R. Pratt et al	0.136	4.80		
	O. Radenbaugh	0.105	3.70		
	G. Heard	0.041	1.45	0.025	0.87
1 &/or 2	C. Pratt	0.083	3.00	0.050	1.75
3	G. Carter	0.058	2.05		
	T. Lake	0.002	0.05		
4	J. Weber	0.122	4.30		
5	E. Eaton	0.062	2.20	0.035	1.25
9	C. Miura			0.014	0.50
11	C. Stopp	0.008	0.30		
15	A. White	0.202	7.14 1/		
16	H. Harris	0.029	1.03		
	R. Keller	0.035	1.24		
17	A. White	0.021	0.73		
19	Cockrells Inc.	0.058	2.04 2/		
26	Cockrells Inc.	0.064	2.25		

1/ Includes 0.080 m^3/s (2.81 ft^3/s) allotted to Diversion No. 13 which now diverts at Diversion No. 15.

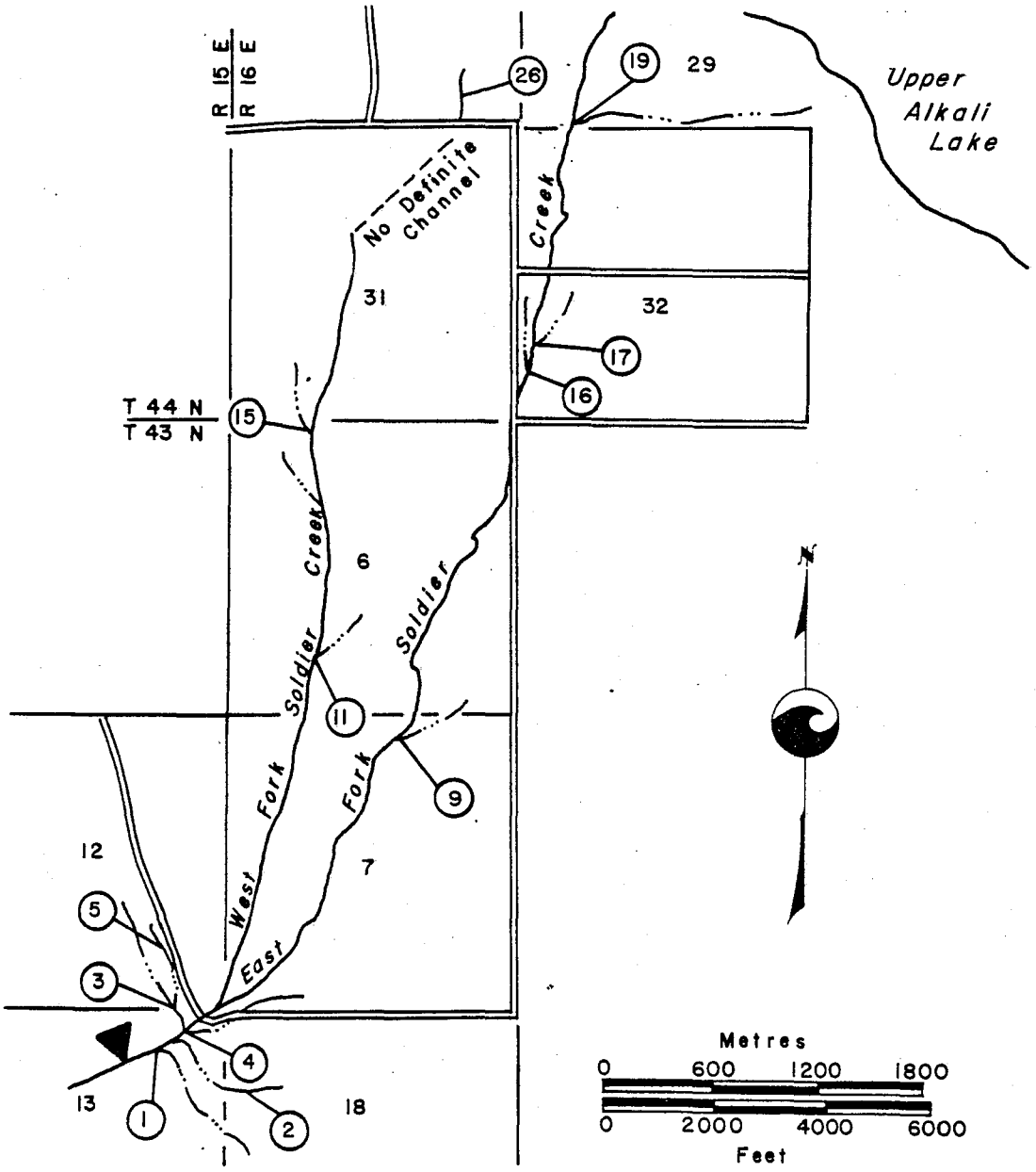
2/ Plus any surplus flow that can be beneficially put to use.

Diversions Number 1 through 5 are Upper Users.

Diversions Number 11 through 26 are Lower Users.

All decreed rights must be satisfied before the appropriative right may be exercised.

Figure 19c



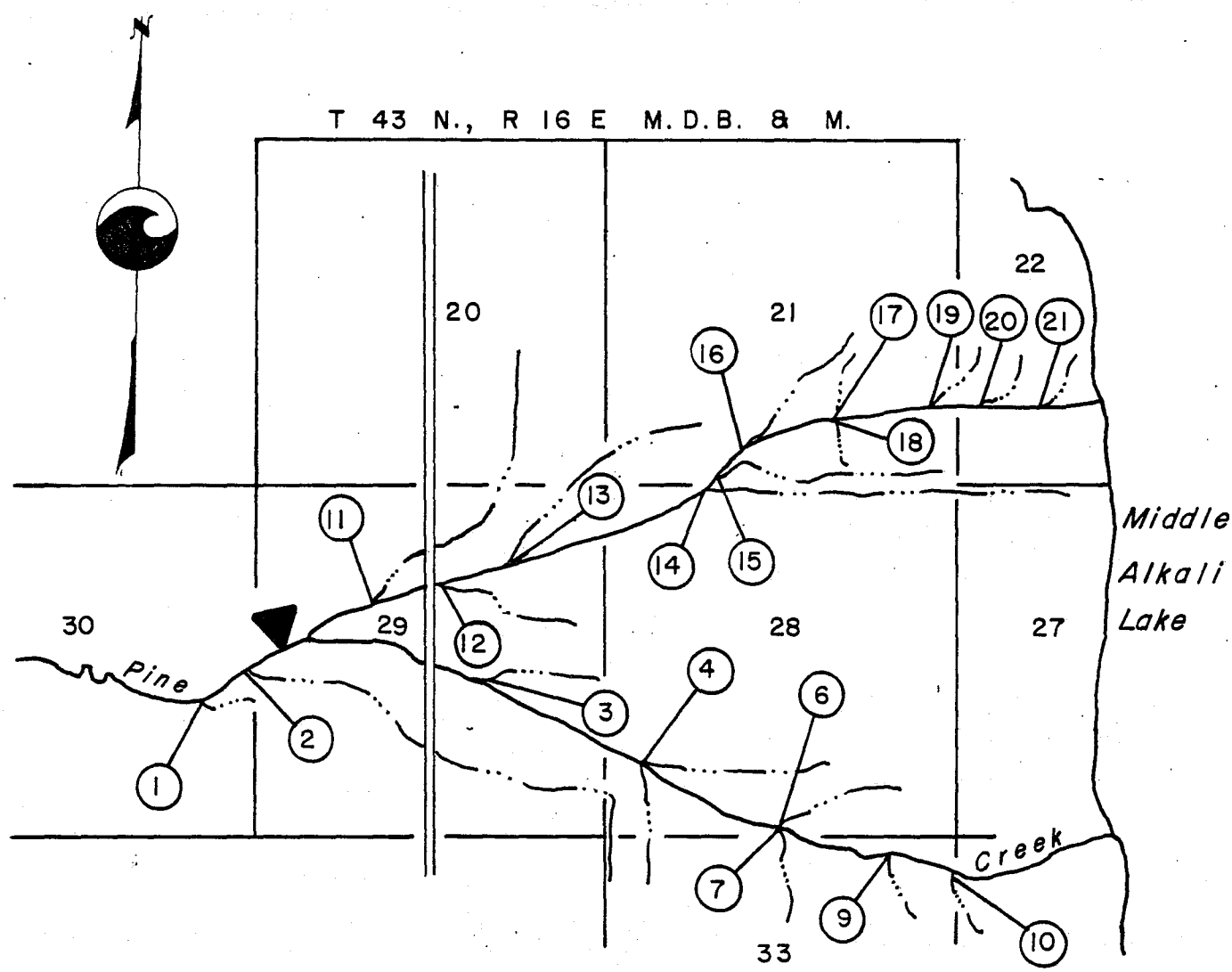
▲ Watermaster installed recorder station

DIVERSIONS FROM SOLDIER CREEK
SURPRISE VALLEY WATERMASTER SERVICE AREA

Rotation Allotments	Name	dam^3	A/F
1,11,13-21	W. Baker	230	186.2
	D. Coops	4	3.0
	R. Hall	193	156.3
3,14	C. Marx	74	60.0
3,6-10	C. Hill	255	206.6
2,4	R. Bordwell	97	78.4
12	C. Hill	3	2.5

Total of first and second rotation is 744 dam^3 (603 A/F).

Figure 19d



▲ Watermaster installed recorder station

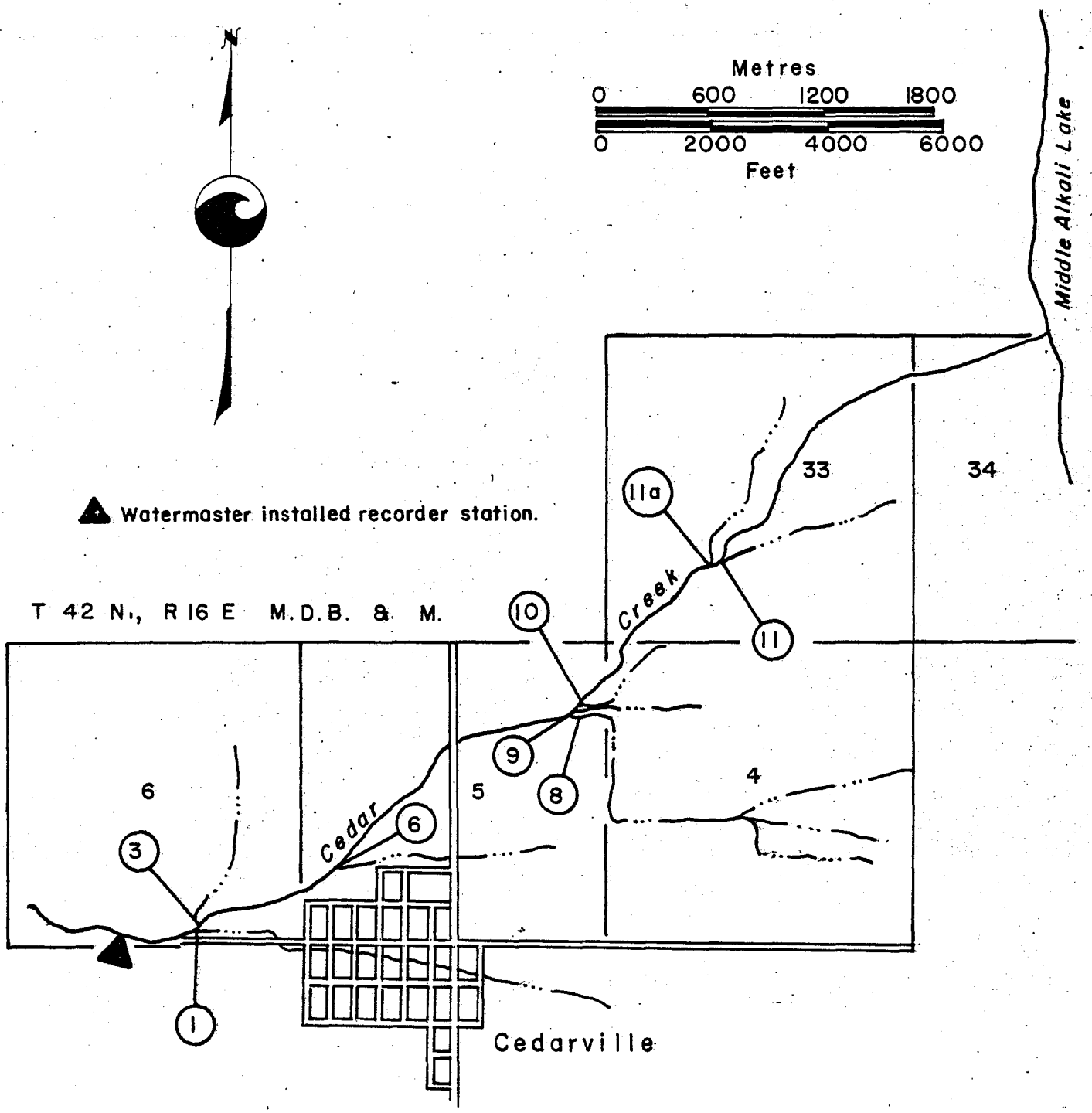
metres
0 600 1200 1800
0 2000 4000 6000
feet

DIVERSIONS FROM PINE CREEK
SURPRISE VALLEY
WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
1	J. Weber	0.142	5.00
3	G. Clark	0.075	2.65
	Laxague	0.014	0.50
6	A. Wylie	0.168	5.95
	W. Warrens		
8	B. Bunyard	0.065	2.30
	C. Kemble	0.040	1.40
	D. Ferguson	0.023	0.80
9	L. Sharrow	0.042	1.50
10	R. Seibal	0.074	2.60
11,11a	G. Ash	0.113	4.00
Channel	F. Areche	0.031	1.10
Channel	C. Hill	0.031	1.10

NOTE: The total 0.818 m^3/s (28.90 ft^3/s), includes 0.142 m^3/s (5.00 ft^3/s) imported from Thoms Creek.

Figure 19a

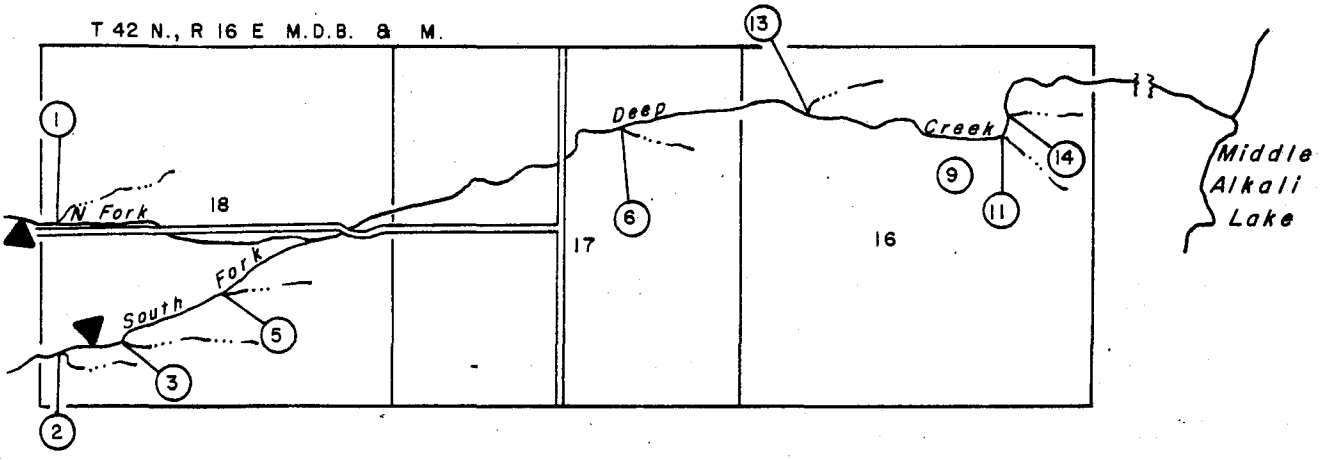


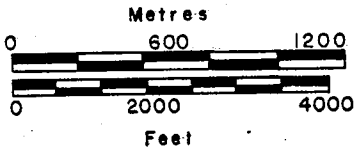
DIVERSIONS FROM CEDAR CREEK
SURPRISE VALLEY
WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
1	G. Hicks	0.003	0.10
	B. Bush	0.004	0.16
	W. Hussa	0.170	6.01
	D. Rosendahl	0.058	2.03
	M. Gooch	0.010	0.34
	F. Page	0.004	0.16
2	J. Laxague	0.018	0.65
3	D. Rosendahl	0.032	1.14
4	F. Queirola	0.093	3.30
	J. Weber	0.094	3.33
5	M. Mauser	0.028	1.00
6	D. Rosendahl	0.011	0.40
9	J. Weber	0.122	4.30
	F. Queirola	0.026	1.00
11[1/]	J. Laxague	0.030	1.05
13	D. Rosendahl	0.023	0.80
14	W. Hussa	0.078	2.75
	R. Bordwell	0.024	0.85

1/ May also be used in diversion No. 2.

Figure 19f





▲ Seasonal recorder (April 1 thru September 30).

DIVERSION FROM DEEP CREEK
SURPRISE VALLEY
WATERMASTER SERVICE AREA

1 Main diversion from Cottonwood Creek

2 Page Ditch

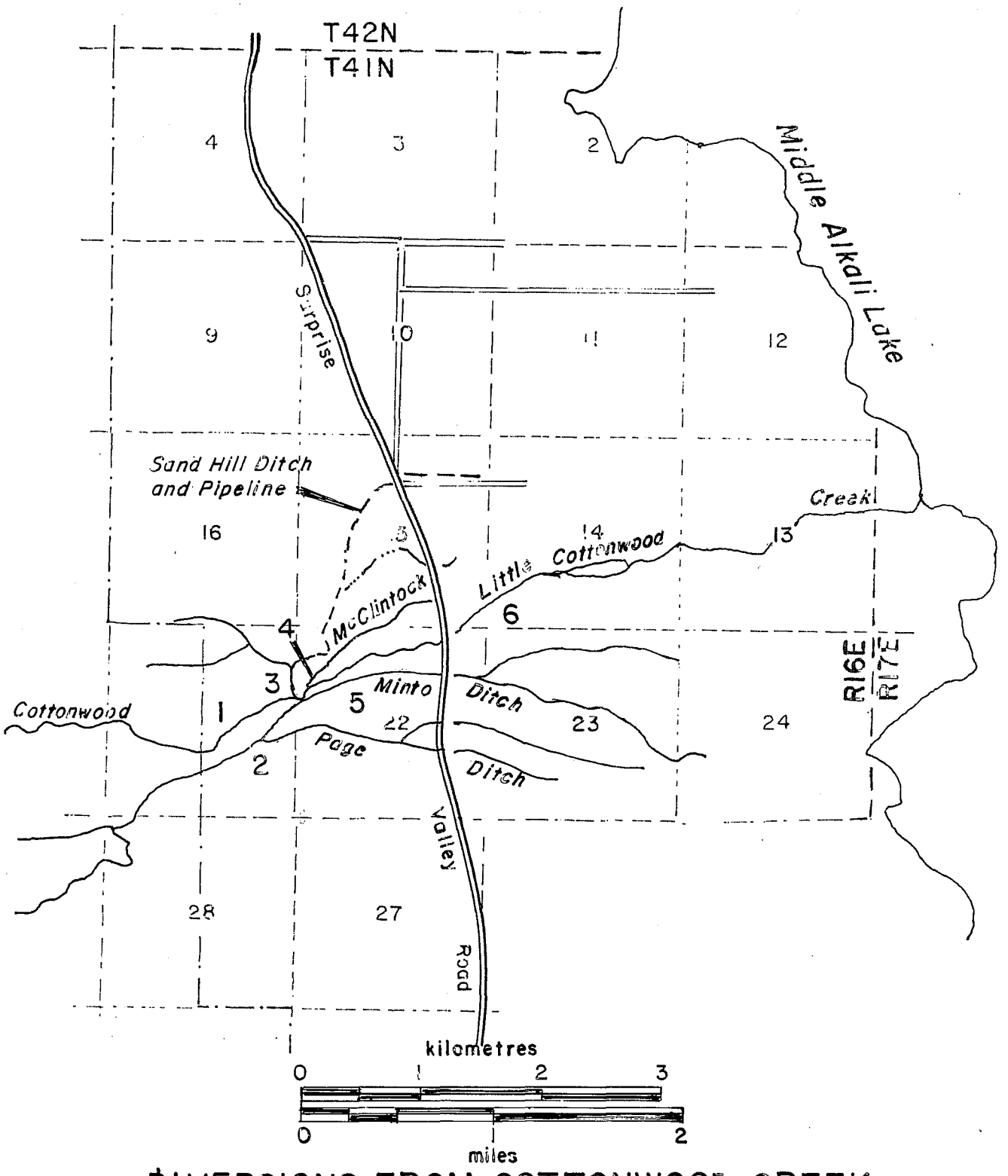
3 Sand Hill Ditch

4 McClintock Ditch

5 Minto Ditch

6 Harris Ditch

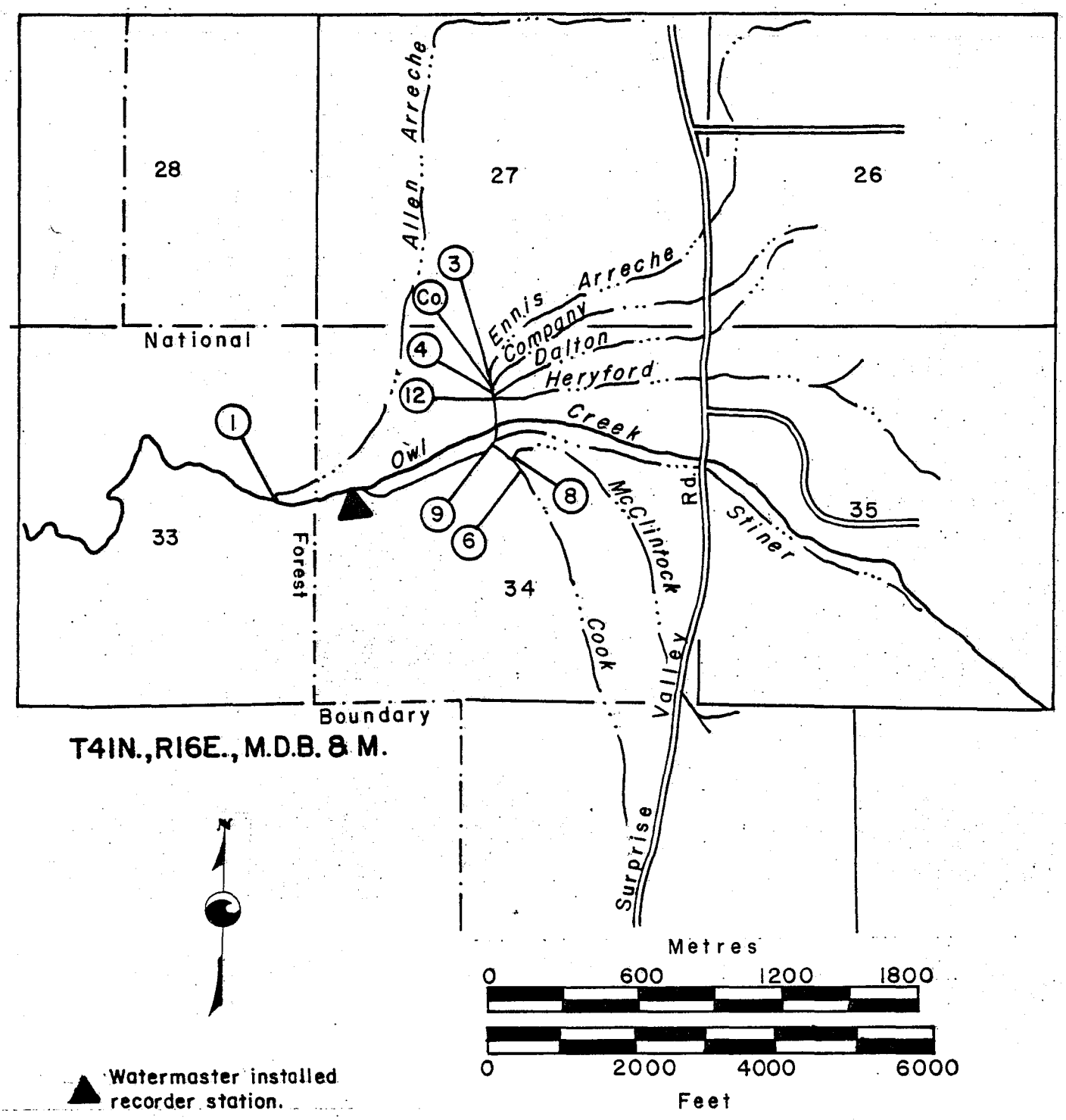
Figure 19g.



DIVERSIONS FROM COTTONWOOD CREEK
SURPRISE VALLEY
WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
1	W. Cockrell	0.070	2.47
	J. Stevenson	0.051	1.81
3	E. Davis	0.033	1.16
	J. Stevenson	0.064	2.25
4	E. Davis	0.089	3.14
Co.	S. Stevenson	0.036	1.26
	J. Bandy	0.051	1.81
	H. Stanley	0.028	0.99
6,8	Cockrells Inc.	0.499	17.62
9	E. Berryessa	0.105	3.71
12	E. Berryessa	0.155	5.48

Figure 19h

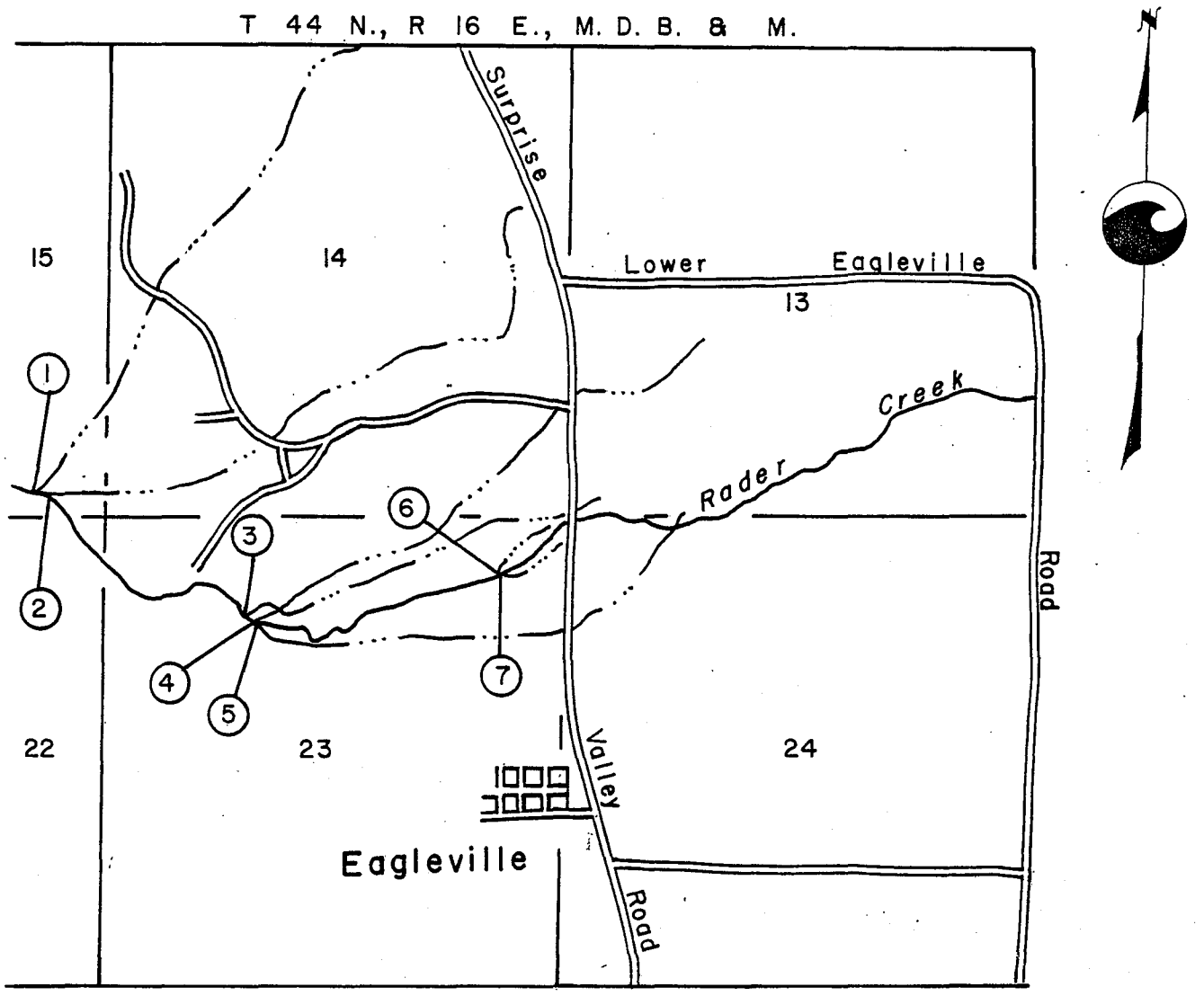


DIVERSIONS FROM OWL CREEK
SURPRISE VALLEY
WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
1	L. Cockrell	1/	1/
2	Lazy S. J. Ranch, Inc.	0.099	3.50
3	K. Minto	0.068	2.39
4	White Pine Lumber Co.	0.255	9.00
5	White Pine Lumber Co.	0.066	2.35
6	C. Minnitte	0.002	0.08
7	R. Reeves	0.002	0.08

1/ 1/7 of total flow from May 20, until water will not reach place of use.

Figure 19i

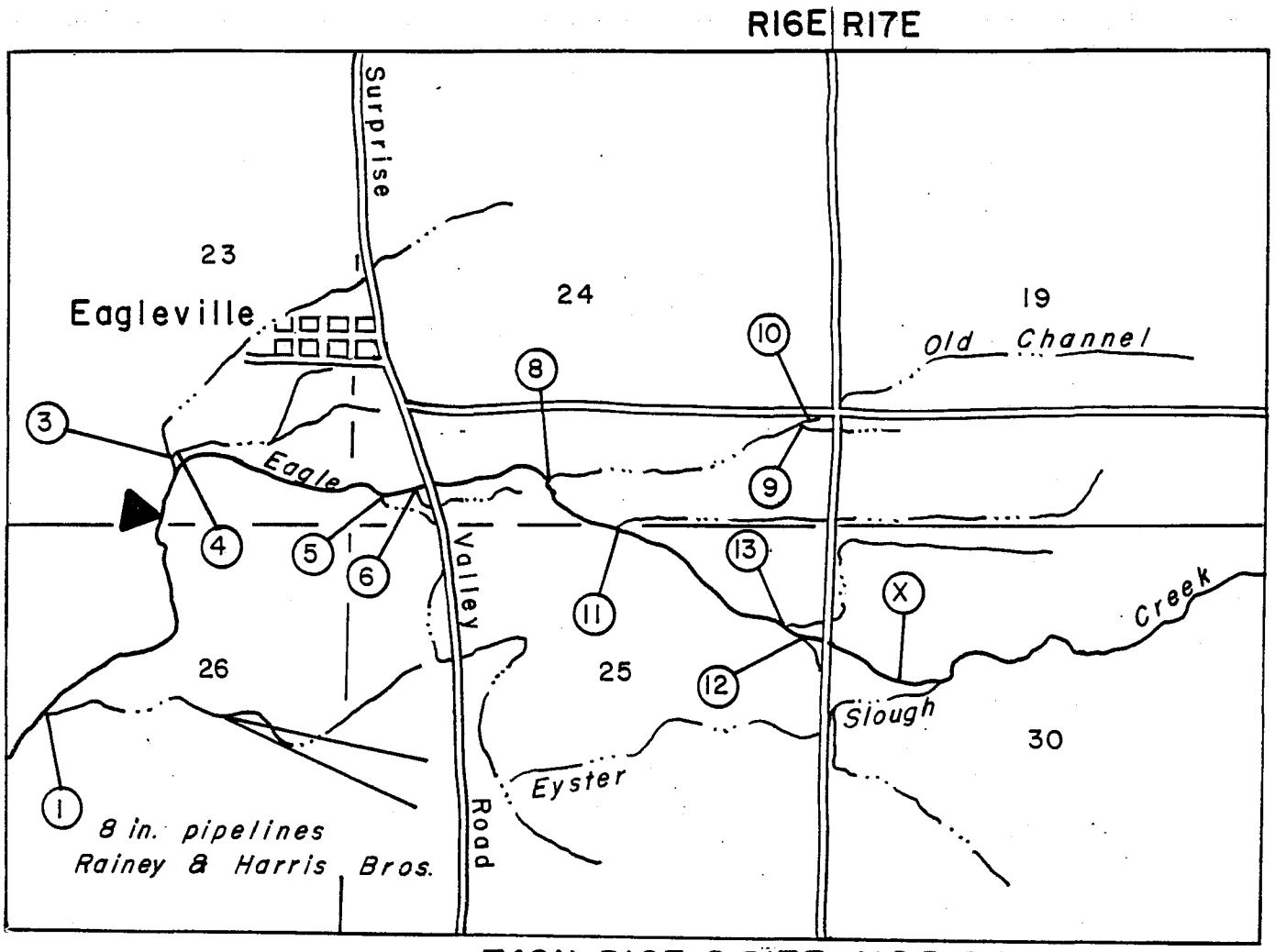


DIVERSIONS FROM RADER CREEK
SURPRISE VALLEY
WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
1	Harris Brothers	0.012	0.41
	R. Morgan	0.010	0.36
	C. Rainey	0.014	0.51
3	13 Town Users	0.028	0.98
	White Pine Lumber Co.	0.142	5.00
4	15 Town Users	0.038	1.36
	White Pine Lumber Co.	0.034	1.20
5	Harris Brothers	0.014	0.50
6,8	White Pine Lumber Co.	0.075	2.65
9	Lazy S. J. Ranch, Inc.	0.004	0.15
10	M. Stevenson	0.089	3.15[1/]
11	White Pine Lumber Co.	0.016	0.55
	Lazy S. J. Ranch, Inc.	0.055	1.95
12	J. Grove	0.006	0.20
	M. Miura	0.020	0.70
13	J. Grove	0.006	0.20
X	Harris Brothers	0.190	6.70[2/]

1/ Minus any water received from
2/ Any water over 0.020 m^3/s, (0.70 ft^3/s) from Eyster Slough must be deducted from this.

Figure 19j



T40N., R16E. & R17E., M.D.B. & M.

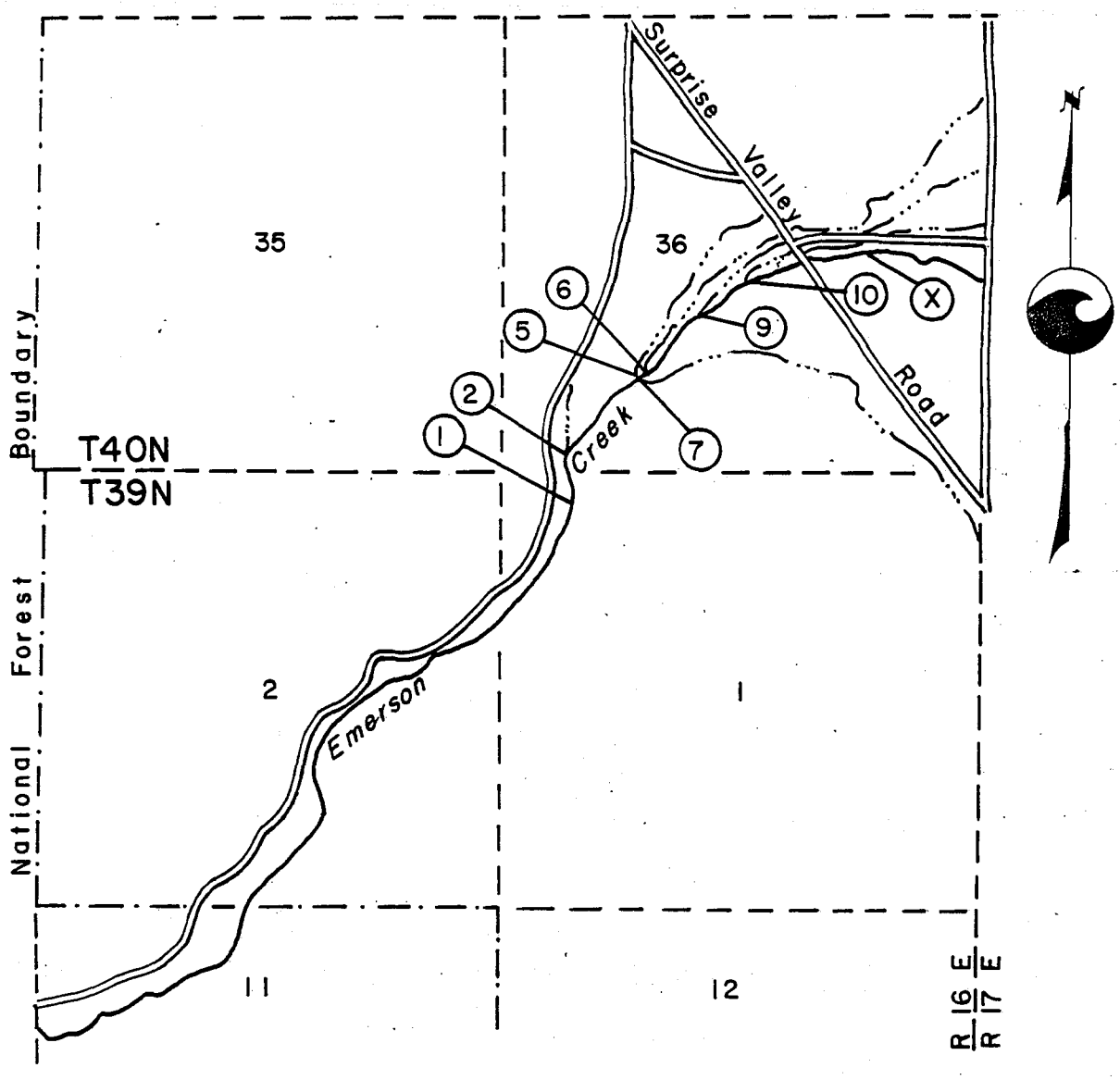
Metres
0 600 1200
0 2000 4000
Feet

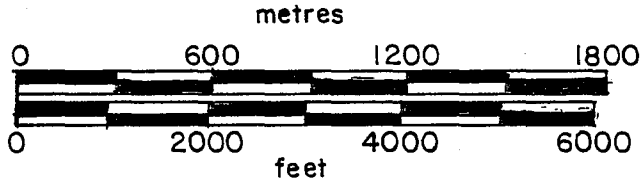
▲ DWR Permanate recorder station.

DIVERSIONS FROM EAGLE CREEK
SURPRISE VALLEY
WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
1	C. Raney	0.057	2.00
2	Harris Bros.	0.057	2.00
	D. Romagnoli	0.006	0.20
5	J. Biconda	0.093	3.30
6	Lazy S. J. Ranch, Inc.	0.017	0.60
	J. Miura	0.064	2.25
7	E. Berryessa	0.146	5.15
9	W. Warrens	0.045	1.60
10	J. Espil	0.051	1.80
X	D. Grove	0.163	5.75

Figure 19k





DIVERSIONS FROM EMERSON CREEK
SURPRISE VALLEY
WATERMASTER SERVICE AREA

SUSAN RIVER WATERMASTER SERVICE AREA

The Susan River service area is situated in southern Lassen County in the vicinity of Susanville. The primary area of water use is in Honey Lake Valley between Susanville and the northwest shore of Honey Lake, a distance of about 40 km (25 mi). The valley floor is at an elevation of about 1 200 m (4,000 ft). The source of supply is composed of three stream systems: the Susan River, Baxter Creek and Parker Creek, with their respective tributaries.

The Susan River originates on the east slope of the Sierra Nevada immediately east of Lassen National Park at an elevation of about 2 400 m (7,900 ft). Its channel runs easterly from Silver Lake through McCoy Flat Reservoir, the town of Susanville, and then to Honey Lake.

The Susan River has four major tributaries: Piute Creek, entering from the north at Susanville; Gold Run and Lassen Creeks, entering from the south between Susanville and Johnstonville; and Willow Creek, entering from the north above Standish. Gold Run and Lassen Creeks rise on the north slope of Diamond Mountain at an elevation of about 2 300 m (7,600 ft). The watersheds of Piute and Willow Creeks are on the south slopes of Round Valley Mountain at lower elevations.

A short distance below its confluence with Willow Creek, the Susan River divides into three channels: Tanner Slough Channel on the north, Old Channel in the middle, and Dill Slough Channel on the south. Hartson Slough and Whitehead Slough divert from Dill Slough on its south bank farther downstream.

The Baxter Creek stream system is in Honey Lake Valley on the east slope of the Sierra Nevada, about 16 km (10 mi) southeast of Susanville. The principal creeks in the system are: Baxter Creek, which rises in the extreme western portion of the basin and flows in an easterly direction, and Elesian, Sloss, and Bankhead Creeks, tributaries of Baxter Creek from the south.

Parker Creek is also in Honey Lake Valley on the east slope of the Sierra Nevada, about 24 km (15 mi) southeast of Susanville. It rises on the east slope of Diamond Mountain and flows in an easterly direction for about 8 m (5 mi) into Honey Lake.

Maps of the Susan River service area, showing the stream systems, diversions, etc., are presented as Figures 20 through 20f, pages 205 through 217.

Basis of Service

The waters of Susan River and its tributaries are distributed in accordance with the water rights defined in Decree No. 4573, Lassen County Superior Court, entered on April 18, 1940. Schedule 3 of the decree defines the rights to the use of water from Willow Creek in Willow Creek Valley, Lower Willow Creek, and the Susan River delta below the Colony Dam. Schedule 4 of the decree defines the rights to the use of water from Gold Run, Piute, Hills, Holtzclaw, and Lassen Creeks above their confluence with the Susan River. Schedules 5 and 6 of the decree define the rights to the use of water from the Susan River exclusive of its tributaries. The decree establishes three priority classes each on Susan River and Gold Run Creek, two on Willow Creek, and one each on Piute and Hills Creeks.

The water of Baxter Creek and its tributaries is distributed in accordance with the water rights defined in the statutory adjudication as set forth in Decree Nol 8174, Lassen County Superior

Court, dated December 15, 1955. Schedule 3 of the decree defines the rights to the use of water from Sloss and Bankhead Creeks and Schedule 4 the rights to the use of water from Baxter and Elesian Creeks. The Baxter Creek rights are divided into five priority classes.

The water of Parker Creek and its tributaries is distributed in accordance with the water rights defined by a statutory adjudication as set forth in Decree No. 8175, Lassen County Superior Court, dated December 15, 1955. Schedule 3 of the decree defines the rights to the use of water from Parker Creek, with four priority classes.

The Susan River watermaster service area was created by order of the Division of Water Resources on November 10, 1941. The Baxter and Parker Creek stream systems were added to the Susan River service area on February 16, 1956.

Water Supply

The water supply in the Susan River service area is obtained from two major sources: snowmelt runoff and springs. Snowpack on the Willow Creek Valley and Piute Creek watersheds, which embrace more than one-half of the Susan River stream system, melts early in the spring and is usually depleted by May 1. Irrigation requirements from this portion of the stream system are then almost entirely dependent on the flow of springs that are relatively constant throughout the year.

Under average flow conditions, Lassen, Gold Run, Baxter, and Parker Creeks and the Susan River above Susanville are sustained by snowmelt runoff until early June. The flow from perennial springs in this portion of the system is comparatively small.

The Lassen Irrigation Company stores supplemental water in Hog Flat and McCoy Flat Reservoirs, on the headwaters of the Susan River. This stored water is released into the Susan River Channel and commingled with the natural flow, usually during June and July. It is then rediverted into Lake Leavitt for further distribution by the irrigation company.

Records of daily mean discharge of the several stream gaging stations in the service area are presented in Tables 54 through 60, pages 218 through 221.

Method of Distribution

Irrigation in the Susan River service area is accomplished by placing dams in the main channels, thus raising the water level for subsequent diversion into canals and ditches. These diversion dams are relatively large on the Susan River Channel and generally much smaller on the various creeks. Wild flooding is the most common method of irrigation in practice. Portions of the irrigated lands have been leveled, permitting a more efficient use of water by using border checks and furrows. Subirrigation occurs in some areas incidental to surface irrigation, or as a result of seepage from ditches and creek channels.

The Lassen Irrigation Company is allowed to use its three reservoirs (McCoy Flat, Hog Flat and Lake Leavitt) to store water as follows: (a) between March 1 and July 1 when the flow in the river just above its confluence with Willow Creek is more than 0.67 m^3/s (20 ft^3/s), and (b) at all other times when the flow at the same point is 0.14 m^3/s (5 ft^3/s) in spite of the allotments outlined in Schedule 3, 6, and users of third priority class in Schedule 5 of the Susan River decree.

1979 Distribution

Watermaster service began in the Susan River service area on March 1 and continued until November 1, including construction work, with Virgil Buechler, Water Resources Technician II, as watermaster.

The available water supply throughout the service area was very low compared to the drought years of 1976 and 1977. Hog Flat and McCoy Flat Reservoirs were able to store 890 and 3 770 dam^3 (720 and 3,060 ac-ft), respectively. The hay crops were in about direct proportion to the precipitation, which was below 50 percent of normal.

Parker Creek. First priority water rights were served for a very short period this spring, diminishing to a spring-fed trickle for the uppermost users.

Baxter Creek. Baxter Creek runoff was extremely low, providing first priority water for only several weeks in May. The entire flow of less than 0.03 m^3/s (1 ft^3/s) was in the Long Ditch from June 1 on. Baxter Creek at Long Ditch dried up in late June.

Lassen-Holtzclaw Creeks. The flows in this stream never exceeded first priority rights, held entirely by the Tangeman Ranch, so no regulation was required. The creek went dry in May.

Hills Creek. Water reached the automatic divide, Diversion No. 220, for a short period in the spring, providing a little storage in the Emerson Reservoir. The creek dried up in late May.

Gold Run Creek. The creek averaged 0.06 m^3/s (2 ft^3/s) until March 15, and then gradually increased to its peak of 0.43 m^3/s (15.2 ft^3/s) May 14, 1979. It then gradually decreased to 0.02 m^3/s (0.50 ft^3/s) on June 10 where it remained the rest of the summer.

Piute Creek. The available water supp. supply, which is spring fed, was sufficient to satisfy all allotments during the year. Some surplus provided the Old Channel users approximately 50 percent of their first priority stock water.

Willow Creek. The flow in upper Willow Creek was sufficient to supply most allotments throughout the season with the exception of the lower end at Hagatas, which was at a minimum after the haying season.

Since October 1976 to September 1979, Eagle Lake has dropped 1 m (3.24 ft). Eagle Lake is a direct contributor to the springs feeding Willow Creek. Some of this has dried up due to the continuation of the drought conditions. The flows to the Lower Susan dropped to an average of 0.25 m^3/s (9 ft^3/s) throughout the summer.

Susan River. There was an insufficient water supply to satisfy any Schedule 6. The A and B Canal lower users received some of the Schedule 5 seasonal priority for a short period until June 15. The Susan River peaked at 3.03 m^3/s (107 ft^3/s) on March 15 and gradually decreased to 0.02 m^3/s (0.50 ft^3/s) on August 10 where it remained through most of September.

Lassen Irrigation Company Reservoirs. The Susan River decree allows the Lassen Irrigation Company's McCoy Flat and Lake Leavitt Reservoirs to store surplus water during the winter and spring months. Once filled, or when a shortage occurs among downstream water right owners, the natural flow in the Susan River above McCoy Flat Reservoir must be released.

The measurable flow recorded into McCoy or Hog Flat Reservoirs totaled 4 660 dam^3 (3,780 ac-ft). Lassen Irrigation District was able to store a total of 9 960 dam^3 (8,080 ac-ft) in Lake Leavitt for the period from March 1 to June 15, providing only one irrigation to their shareholders. Lake Leavitt dried on July 15, 1979.

Lower Susan River. Schedule 3 was very short the entire season, averaging about 0.25 m^3/s (9 ft^3/s) from Willow Creek from June on, which only satisfied the first priority and approximately

25 percent of the second priority. Therefore, in order to provide stockwater in the main river channels only, regulation became very demanding.

Special Occurrences

New wells are still being drilled to provide irrigation water, which is continuing to deplete the ground water supply.

A new coffer dam was constructed in the A and B Canal below Bradshaw and Beckett's upper division.

Repairs were done to the Bantley Dam on the abutments and concrete lip. This should help in providing the decreed water rights to Bradshaw and Beckett and also allow Lassen Irrigation District to supply water to Egan, their shareholder.

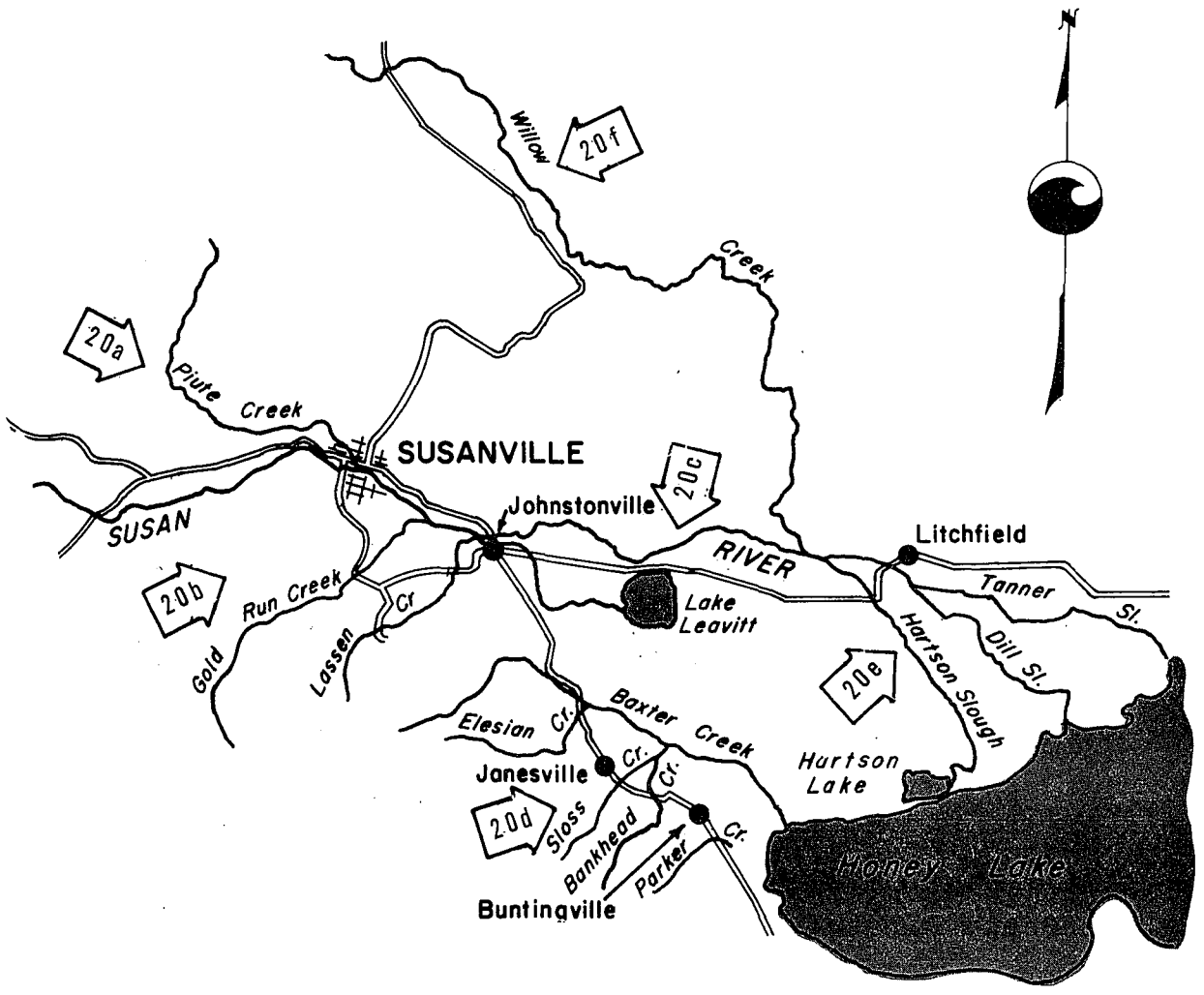
We encountered extreme difficulty in regulating the Colony Dam and Diversion No. 56 that we had to install three metal screw headgates to provide complete control.

Also, two metal screw headgates were installed on the Flood Canal Diversion at the Turkey Town Dam to provide complete control on the diversion.

The automatic split on the Down Ditch problem between the Tanner Ranch and R. C. Roberts has been leveled and repaired.

A new levee has been installed on the Hartson Slough Bypass which will help deliver the winter storage to Hartson Lake and summer flows to the decreed users of Hartson Slough.

Figure 20



Indicates Detail Maps.

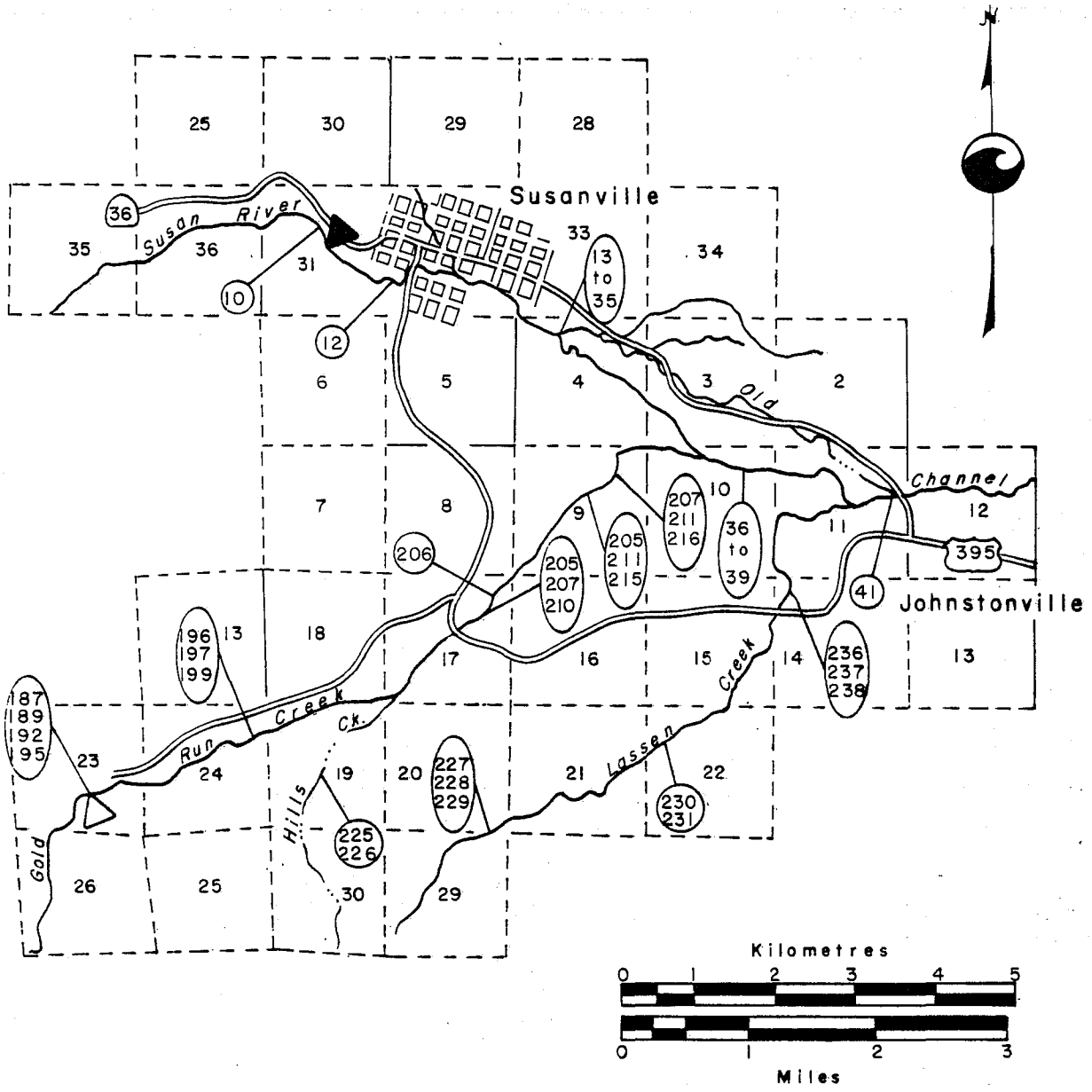
INDEX MAP
SUSAN RIVER WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
10	Ramsey Ditch	0.181	6.40
12	Federal Government Sv. Ditch	0.092	3.26
13-35	Old Channel	0.484	17.10
36-39	Lassen 7-D Ranch Inc.	0.137	4.85
41	Occidental et al	0.453	16.00*
187,189 192,195	Satica Ditch	0.109	3.85
196,197 199	Sella Ditch	0.074	2.62
205,207 210	Satica	0.102	3.60
205,211 215	Pyle	0.139	4.90
206	Mallery, M.		**
207,211 216,219	Lassen 7-D Ranch Inc.	0.109	3.85
207,211 216,219	Mallery, R.	0.108	3.80
220	Emerson Hills Ditch	0.109	3.85
225-226	Nagle	0.069	2.45
227-229	Tangeman	0.130	4.60
230-231	Mallery	0.077	2.70
230,240	Lassen 7-D Ranch Inc.	0.077	2.70

* Does not include Lassen I.D. water rights to Lake Leavitt.

** 48% of Gold Run Creek at 206.

Figure 20a



△ Permanent recorder station.

▲ Watermaster installed recorder station.

DIVERSIONS FROM SUSAN RIVER
SUSAN RIVER WATERMASTER SERVICE AREA

ALLOCATIONS FROM BAXTER CREEK AND ELESIAN CREEK

Diversion Number	Name	m^3/s	ft^3/s
3-5	Dickson	0.071	2.50
6-8,12	Gray Eagle Corp.	0.025	0.88
11	Burnett, Baker	0.006	0.20
8-10,12	Mallery	0.092	3.23
8,12-16	Mallery	0.099	3.49
16	Gray Eagle Corp.	0.015	0.52
17-18	Faith Ranch	0.005	0.16
20	Bailey	0.049	1.71
17,21,26-27	Bass	0.116	4.10
17,22-24,28,32-33	Smith	0.080	2.82
17,22-24,28,32-33	Kanaval	0.130	4.58
36,39	Peterson	0.040	1.42
70	Ahern	0.001	0.02
71-72	A & K Company	0.049	1.71
75,77,79-80	Blickenstaff	0.018	0.64
78	U.S. Hertz Inc.	0.030	1.05
81,83	Blickenstaff	0.082	2.88
73,75	Garza	0.033	1.17
74,76	Hemphill	0.056	1.96
75,77	Dieter	0.055	1.95
75,77,80	Dieter	0.009	0.30
77,79	Mulroney	0.051	1.80
78	Mulroney	0.019	0.67
78	Cummings	0.004	0.15
81,83	Blankenship	0.014	0.50
84,90	Dow	0.051	1.80
85,89	Marsters, McDonald	0.045	1.60

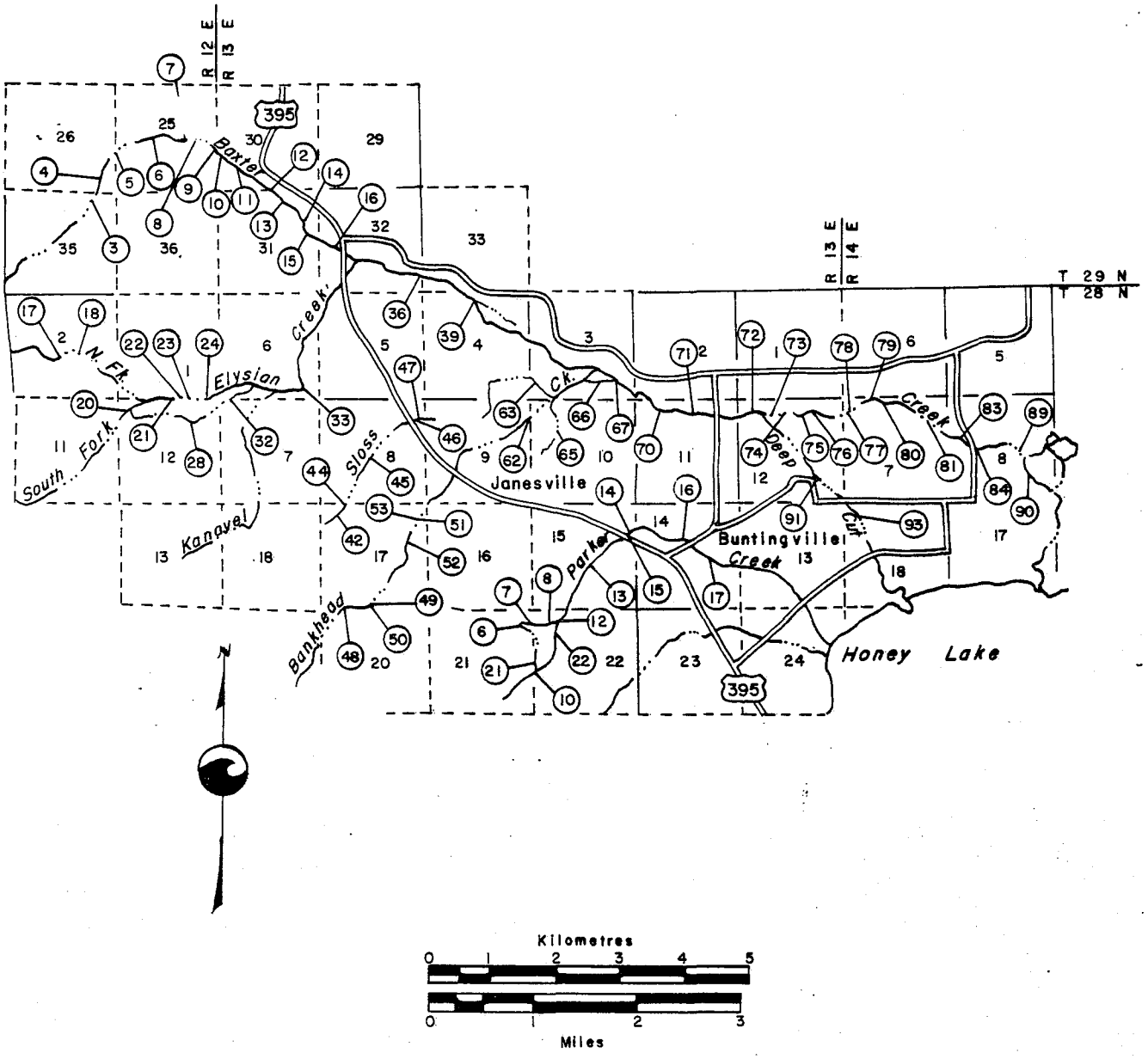
ALLOCATIONS FROM SLOSS AND BANKHEAD CREEKS

42	Mossman	0.001	0.02
44	Doyle	0.0001	0.002
45	Snipes	0.002	0.08
46	Grover	0.034	1.20
46-47	Peterson	0.039	1.20
48-50	Row	0.004	0.15
51	de Rocher	0.002	0.08
52-53,55	White	0.014	0.48
56,62	Ashmore	0.015	0.53
63,65	Dow	0.080	2.83
66-67	Myers	0.007	0.26
91,93	Bailey	0.086	3.02

DIVERSIONS FROM PARKER CREEK

6-12	Butler	0.025	0.89
13-15	Hoffman	0.092	3.26
15	Flux	0.039	1.38
16-17	Bailey	0.058	2.06

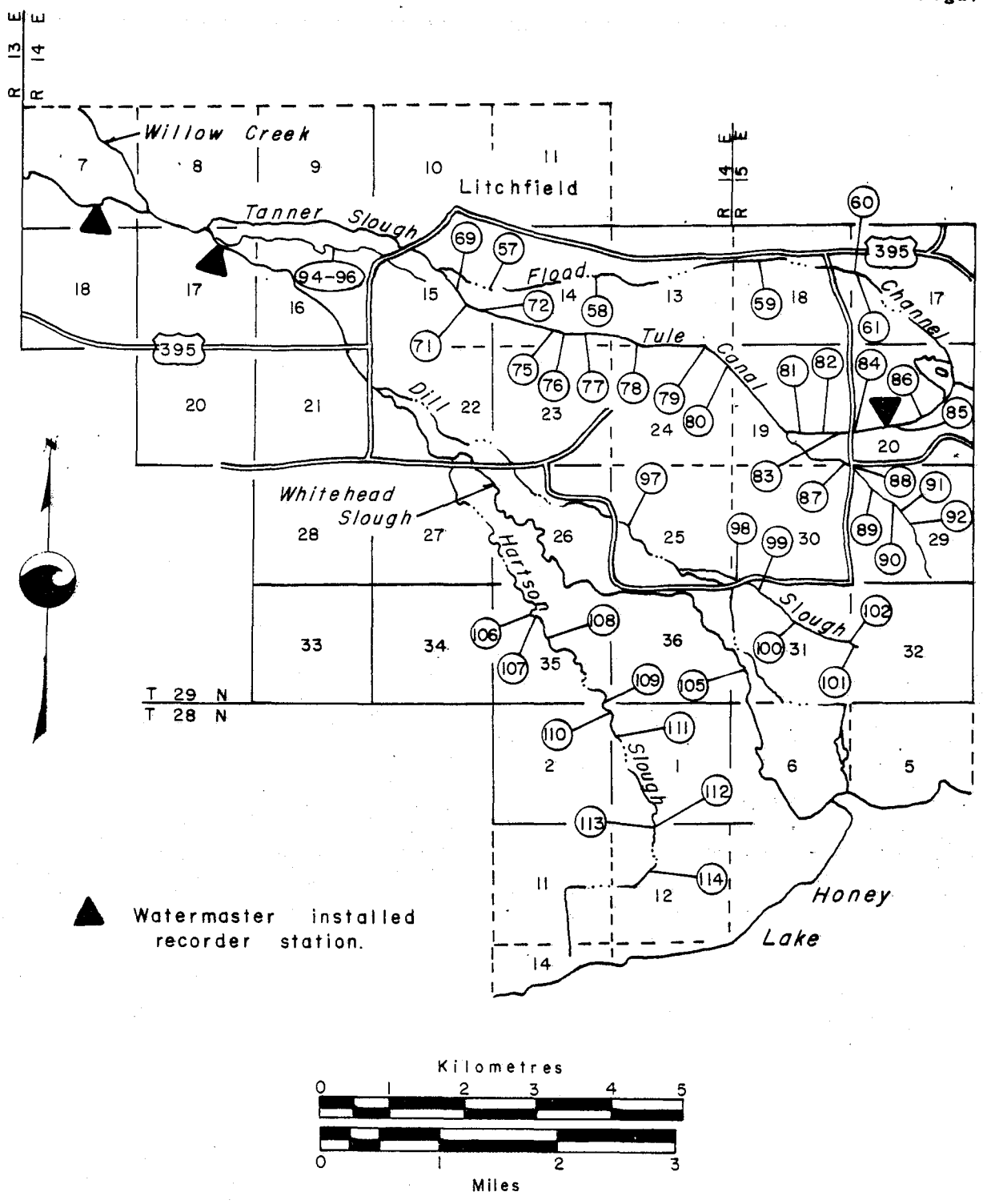
Figure 20b



DIVERSIONS FROM BAXTER CREEK AND PARKER CREEK SUSAN RIVER WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
56,94,96	Smith et al	0.112	3.95
57-58,69 72	Smith	0.212	7.50
58-61, 79-81,84	Mapes	0.376	13.29
71,75-78	McClelland	0.304	10.75
81-83	DeWitt, W. Theodore, J.	0.050 0.053	1.75 1.88
82,87-89 91-92	Wells	0.106	3.75
82,87-89 91-92	DeWitt, F.	0.106	3.75
85-86	Calif. Dept. of Fish and Game	0.544	19.20
90-92	Calif. Dept. of Fish and Game	0.064	2.26
90-92	Brown et al	0.010	0.34
97	Tanner	0.142	5.00
98,100-101	Dow	0.142	5.00
99	Honey Lake Ranch	0.212	7.50
102	Honey Lake Ranch	0.154	5.45
106,109 111	Roberts	0.031	1.10
106,109 111	Tanner	0.072	2.55
107-108	Roberts	0.034	1.20
110-111	Wolf	0.044	1.55
110, 112-114	Calif. Dept. of Fish and Game	0.088	3.10

Figure 20c



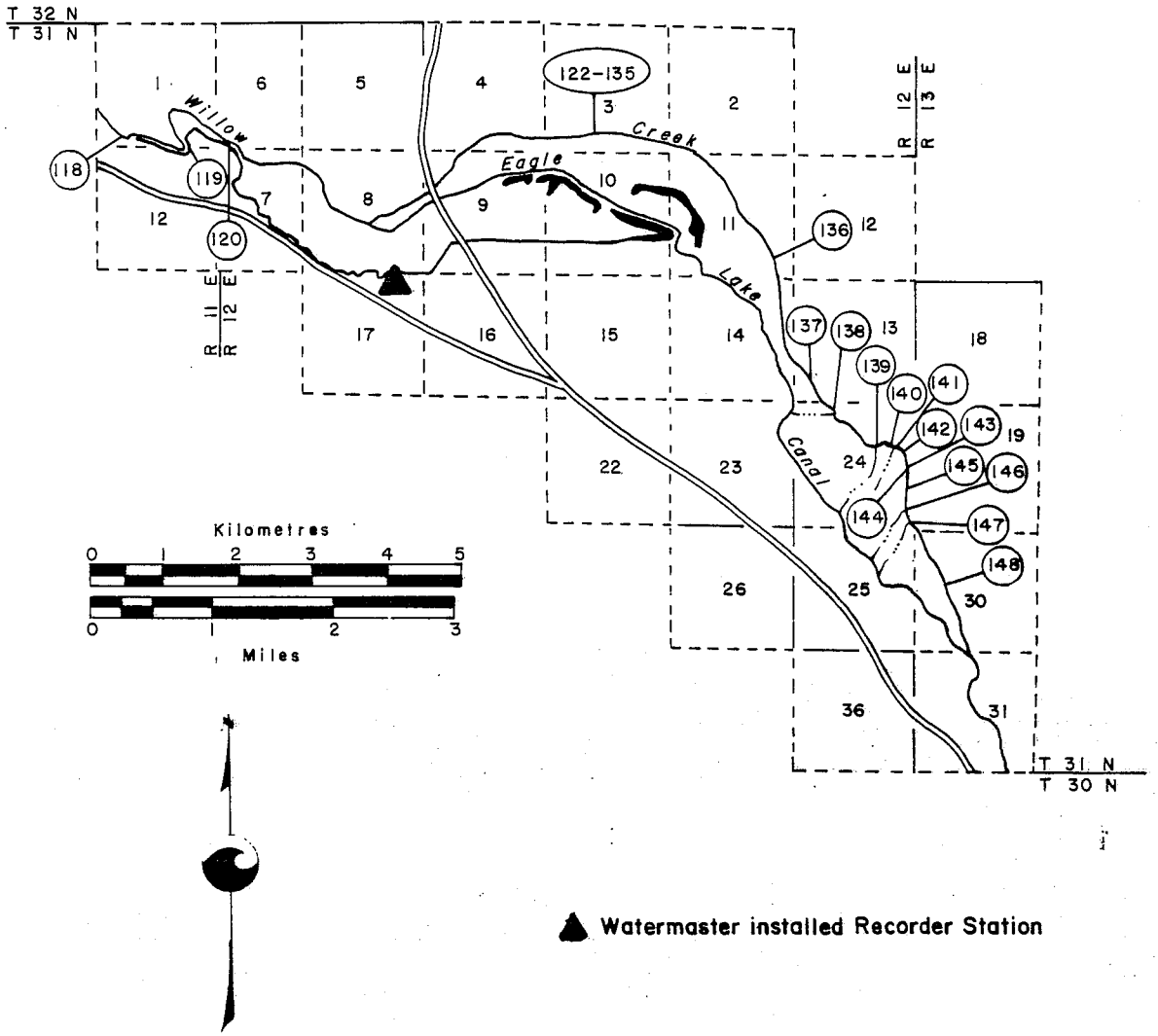
DIVERSIONS FROM SUSAN RIVER
SUSAN RIVER WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
118-119	Murrer	0.060	2.10
	Barron	0.060	2.10
120	Murrer	0.028	1.00
122,135	Barron	0.422	14.90
136-143, 145	Hansan Ranch	0.139	4.90
144-147	Hagata	0.064	2.25
147-148	Hagata	0.055	1.95

NOTE: Allotments to be measured as the average difference during any seven-day period between the water available for use on the acreage to be supplied and the water passing off the acreage.

The Barron Ranch also diverts from the Old Eagle Lake Canal. It must release to downstream users 38 percent of second priority water available to it over any seven (7) day period. If deficiency exists the watermaster obtains required flow by increasing Barron Reservoir releases accordingly.

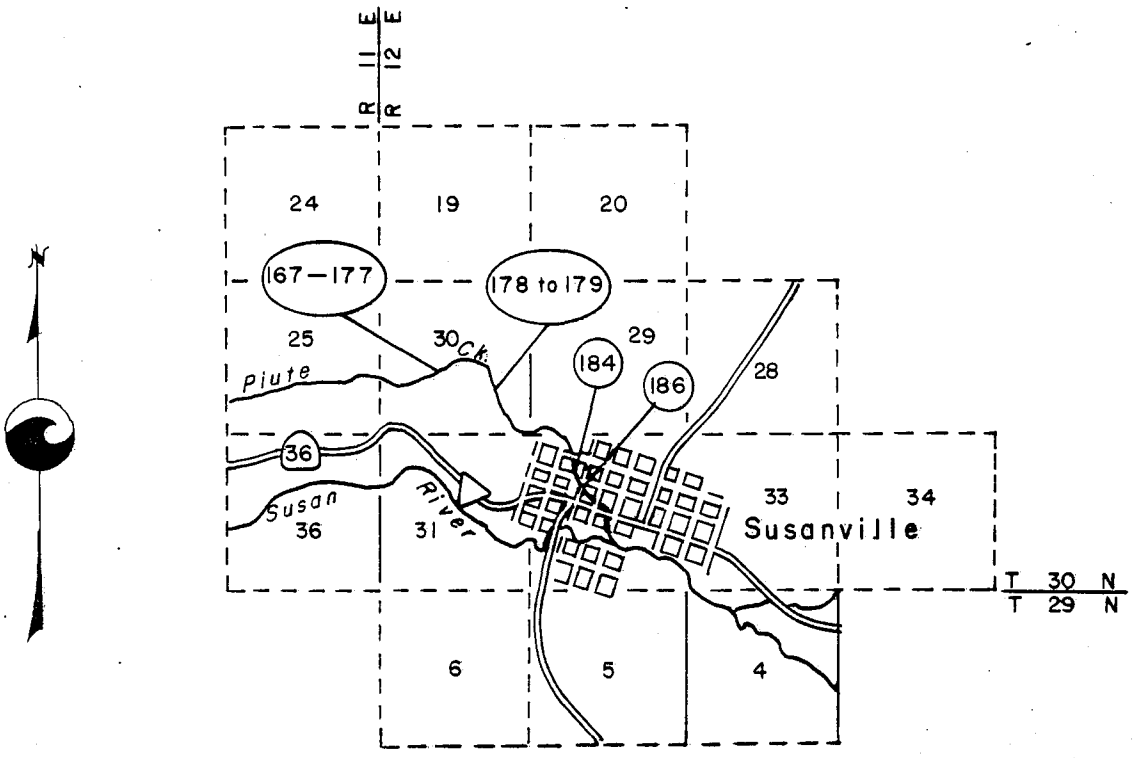
Figure 20d



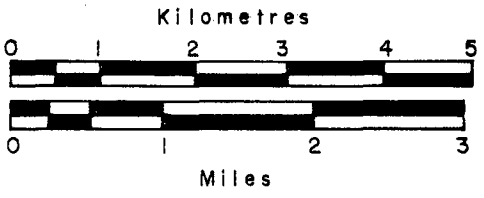
DIVERSIONS FROM WILLOW CREEK
SUSAN RIVER WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
167-177	California Pacific Utility	0.071	2.50
178-179	Marmo Ditch	0.004	0.16
184	Susanville, City of	0.003	0.11
186	Susanville Elementary School	0.002	0.07

Figure 20a

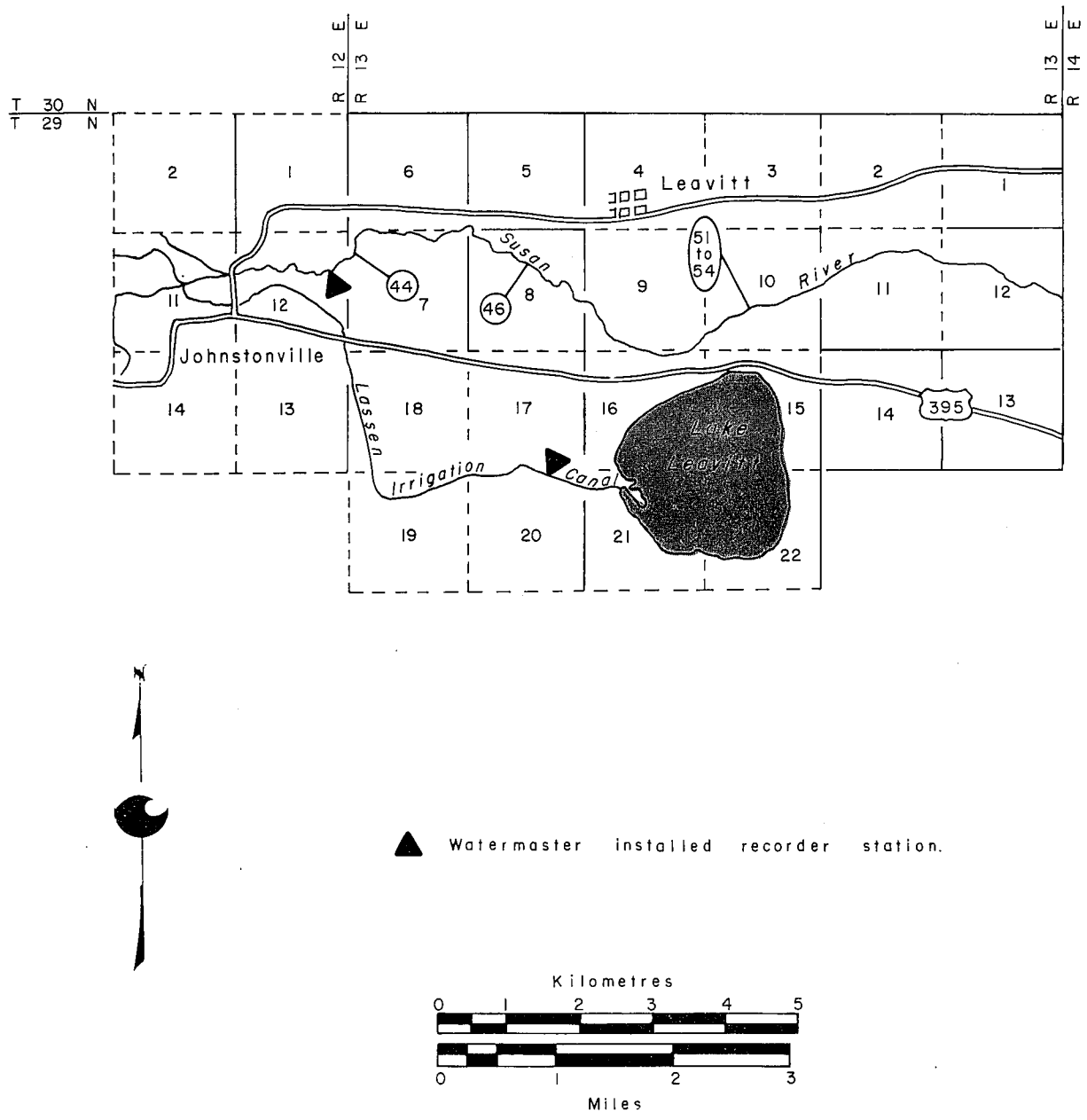


△ U.S.G.S. Permanent Recorder Station.



DIVERSIONS FROM PIUTE CREEK
SUSAN RIVER WATERMASTER SERVICE AREA

Diversion Number	Name	m^3/s	ft^3/s
44	Farris-McAllister Dam	0.212	7.47
46	Roberts Dam	0.141	4.98
51-54	Roberts-Chappius Dam	0.340	12.00



DIVERSIONS FROM SUSAN RIVER
SUSAN RIVER WATERMASTER SERVICE AREA

SUSAN RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 54

SUSAN RIVER AT SUSANVILLE

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1	0.680	24.0	1.558	55.0	2.181	77.0	4.050	143.0	0.127	4.5	0.021	0.7	0.065	2.3	1
2	0.538	19.0	1.444	51.0	2.124	75.0	3.852	136.0	0.116	4.1	0.031	1.1	0.082	2.9	2
3	0.651	23.0	1.416	50.0	2.181	77.0	3.767	133.0	0.091	3.2	0.020	0.7	0.062	2.2	3
4	1.020	36.0	1.558	55.0	2.294	81.0	3.682	130.0	0.091	3.2	0.018	0.6	0.059	2.1	4
5	1.614	57.0	1.926	68.0	2.662	94.0	3.540	125.0	0.085	3.0	0.016	0.6	0.091	3.2	5
6	2.577	91.0	2.860	101.0	3.625	128.0	3.455	122.0	0.074	2.6	0.016	0.6	0.079	2.8	6
7	3.002	106.0	2.351	83.0	3.597	127.0	3.342	118.0	0.076	2.7	0.024	0.9	0.068	2.4	7
8	3.002	106.0	2.436	86.0	3.144	111.0	3.285	116.0	0.062	2.2	0.013	0.5	0.085	3.0	8
9	2.492	88.0	2.407	85.0	2.690	95.0	3.172	112.0	0.065	2.3	0.012	0.4	0.065	2.3	9
10	2.152	76.0	2.039	72.0	2.436	86.0	3.030	107.0	0.057	2.0	0.014	0.5	0.082	2.9	10
11	2.209	78.0	1.841	65.0	2.351	83.0	2.860	101.0	0.071	2.5	0.017	0.6	0.079	2.8	11
12	2.492	88.0	1.841	65.0	2.294	81.0	2.634	93.0	0.071	2.5	0.022	0.8	0.065	2.3	12
13	2.436	86.0	2.124	75.0	2.379	84.0	2.407	85.0	0.071	2.5	0.031	1.1	0.062	2.2	13
14	2.379	84.0	2.407	85.0	3.597	127.0	2.096	74.0	0.059	2.1	0.031	1.1	0.062	2.2	14
15	3.030	107.0	2.492	88.0	3.880	137.0	1.274	45.0	0.048	1.7	0.031	1.1	0.062	2.2	15
16	2.690	95.0	2.662	94.0	3.738	132.0	0.538	19.0	0.042	1.5	0.031	1.1	0.065	2.3	16
17	1.954	69.0	2.549	90.0	3.483	123.0	0.396	14.0	0.040	1.4	0.016	0.6	0.079	2.8	17
18	1.643	58.0	2.209	78.0	3.313	117.0	0.368	13.0	0.037	1.3	0.020	0.7	0.062	2.2	18
19	1.473	52.0	1.869	66.0	3.087	109.0	0.368	13.0	0.027	1.0	0.023	0.8	0.065	2.3	19
20	1.416	50.0	1.671	59.0	2.860	101.0	0.312	11.0	0.040	1.4	0.022	0.8	0.102	3.6	20
21	1.359	48.0	1.671	59.0	2.719	96.0	0.269	9.5	0.048	1.7	0.023	0.8	0.091	3.2	21
22	1.303	46.0	1.671	59.0	2.492	88.0	0.241	8.5	0.074	2.6	0.022	0.8	0.085	3.0	22
23	1.246	44.0	1.812	64.0	2.209	78.0	0.229	8.1	0.040	1.4	0.020	0.7	0.074	2.6	23
24	1.331	47.0	1.869	66.0	1.954	69.0	0.210	7.4	0.034	1.2	0.016	0.6	0.068	2.4	24
25	1.501	53.0	1.671	59.0	1.784	63.0	0.187	6.6	0.042	1.5	0.016	0.6	0.099	3.5	25
26	1.643	58.0	1.869	66.0	1.614	57.0	0.153	5.4	0.025	0.9	0.018	0.6	0.093	3.3	26
27	2.181	77.0	3.002	106.0	1.388	49.0	0.136	4.8	0.025	0.9	0.016	0.6	0.074	2.6	27
28	2.152	76.0	2.520	89.0	1.246	44.0	0.125	4.4	0.022	0.8	0.074	2.6	0.091	3.2	28
29	1.841	65.0	2.322	82.0	2.662	94.0	0.122	4.3	0.018	0.7	0.082	2.9	0.091	3.2	29
30	1.869	66.0	2.266	80.0	4.333	153.0	0.119	4.2	0.022	0.8	0.108	3.8	0.082	2.9	30
31	1.643	58.0			4.248	150.0			0.021	0.7	0.079	2.8			31
MEAN	1.855	65.5	2.078	73.4	2.728	96.3	1.674	59.1	0.055	2.0	0.029	1.0	0.076	2.7	MEAN
DAM^3	4966.		5382.		7301.		4336.		149.		78.		198.		DAM^3
AC-FT		4026.		4363.		5919.		3515.		120.		63.		160.	AC-FT

SUSAN RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 55

GOLD RUN CREEK NEAR SUSANVILLE

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.065	2.3	0.269	9.5	0.122	4.3	0.020	0.7	0.014	0.5	0.006	0.2	1
2			0.065	2.3	0.283	10.0	0.113	4.0	0.020	0.7	0.014	0.5	0.006	0.2	2
3			0.065	2.3	0.340	12.0	0.110	3.9	0.020	0.7	0.014	0.5	0.006	0.2	3
4			0.105	3.7	0.396	14.0	0.105	3.7	0.020	0.7	0.014	0.5	0.006	0.2	4
5			0.142	5.0	0.340	12.0	0.099	3.5	0.020	0.7	0.014	0.5	0.014	0.5	5
6			0.184	6.5	0.266	9.4	0.091	3.2	0.020	0.7	0.014	0.5	0.014	0.5	6
7			0.178	6.3	0.221	7.8	0.085	3.0	0.020	0.7	0.014	0.5	0.014	0.5	7
8			0.181	6.4	0.184	6.5	0.065	2.3	0.020	0.7	0.014	0.5	0.014	0.5	8
9			0.178	6.3	0.181	6.4	0.059	2.1	0.020	0.7	0.014	0.5	0.014	0.5	9
10			0.113	4.0	0.184	6.5	0.054	1.9	0.020	0.7	0.014	0.5	0.014	0.5	10
11			0.102	3.6	0.232	8.2	0.057	2.0	0.020	0.7	0.014	0.5	0.014	0.5	11
12			0.119	4.2	0.312	11.0	0.057	2.0	0.020	0.7	0.014	0.5	0.014	0.5	12
13			0.181	6.4	0.368	13.0	0.057	2.0	0.020	0.7	0.014	0.5	0.014	0.5	13
14			0.227	8.0	0.425	15.0	0.042	1.5	0.020	0.7	0.014	0.5	0.020	0.7	14
15			0.255	9.0	0.425	15.0	0.042	1.5	0.020	0.7	0.014	0.5	0.020	0.7	15
16			0.241	8.5	0.425	15.0	0.042	1.5	0.020	0.7	0.014	0.5	0.020	0.7	16
17			0.193	6.8	0.425	15.0	0.042	1.5	0.020	0.7	0.014	0.5	0.020	0.7	17
18			0.181	6.4	0.425	15.0	0.042	1.5	0.020	0.7	0.014	0.5	0.020	0.7	18
19			0.119	4.2	0.425	15.0	0.042	1.5	0.020	0.7	0.006	0.2	0.020	0.7	19
20			0.113	4.0	0.425	15.0	0.042	1.5	0.020	0.7	0.006	0.2	0.020	0.7	20
21			0.136	4.8	0.425	15.0	0.042	1.5	0.020	0.7	0.006	0.2	0.020	0.7	21
22			0.178	6.3	0.425	15.0	0.042	1.5	0.020	0.7	0.006	0.2	0.020	0.7	22
23			0.136	4.8	0.368	13.0	0.028	1.0	0.020	0.7	0.006	0.2	0.020	0.7	23
24			0.122	4.3	0.340	12.0	0.028	1.0	0.020	0.7	0.006	0.2	0.020	0.7	24
25			0.122	4.3	0.312	11.0	0.028	1.0	0.014	0.5	0.006	0.2	0.020	0.7	25
26			0.215	7.6	0.241	8.5	0.028	1.0	0.014	0.5	0.006	0.2	0.020	0.7	26
27			0.255	9.0	0.241	8.5	0.028	1.0	0.014	0.5	0.006	0.2	0.020	0.7	27
28			0.283	10.0	0.184	6.5	0.028	1.0	0.014	0.5	0.006	0.2	0.020	0.7	28
29			0.227	8.0	0.184	6.5	0.028	1.0	0.014	0.5	0.006	0.2	0.020	0.7	29
30			0.283	10.0	0.181	6.4	0.028	1.0	0.014	0.5	0.006	0.2	0.020	0.7	30
31					0.147	5.2			0.014	0.5	0.006	0.2			31
MEAN			0.165	5.8	0.310	10.9	0.056	2.0	0.019	0.7	0.011	0.4	0.016	0.6	MEAN
DAM^3			429.		829.		145.		50.		28.		42.		DAM^3
AC-FT				347.		672.		118.		40.		23.		34.	AC-FT

SUSAN RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 56

SUSAN RIVER BELOW JOHNSTONVILLE BRIDGE

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.906	32.0	0.850	30.0	0.680	24.0	0.014	0.5	0.014	0.5	0.014	0.5	1
2			0.963	34.0	0.821	29.0	0.651	23.0	0.014	0.5	0.014	0.5	0.014	0.5	2
3			1.020	36.0	0.878	31.0	0.595	21.0	0.014	0.5	0.014	0.5	0.014	0.5	3
4			1.076	38.0	1.020	36.0	0.595	21.0	0.014	0.5	0.014	0.5	0.014	0.5	4
5			1.161	41.0	1.218	43.0	0.538	19.0	0.014	0.5	0.014	0.5	0.014	0.5	5
6			1.473	52.0	1.643	58.0	0.538	19.0	0.014	0.5	0.014	0.5	0.014	0.5	6
7			1.359	48.0	1.359	48.0	0.538	19.0	0.014	0.5	0.014	0.5	0.014	0.5	7
8			1.359	48.0	1.076	38.0	0.793	28.0	0.014	0.5	0.014	0.5	0.014	0.5	8
9			1.359	48.0	0.935	33.0	0.396	14.0	0.014	0.5	0.014	0.5	0.014	0.5	9
10			1.218	43.0	0.935	33.0	0.312	11.0	0.014	0.5	0.014	0.5	0.014	0.5	10
11			1.133	40.0	0.935	33.0	0.255	9.0	0.014	0.5	0.014	0.5	0.014	0.5	11
12			1.104	39.0	0.963	34.0	0.113	4.0	0.014	0.5	0.014	0.5	0.014	0.5	12
13			1.076	38.0	1.133	40.0	0.085	3.0	0.014	0.5	0.014	0.5	0.014	0.5	13
14			1.161	41.0	1.331	47.0	0.085	3.0	0.014	0.5	0.014	0.5	0.014	0.5	14
15			1.218	43.0	1.076	38.0	0.113	4.0	0.014	0.5	0.014	0.5	0.014	0.5	15
16			1.218	43.0	0.906	32.0	0.113	4.0	0.014	0.5	0.014	0.5	0.014	0.5	16
17			1.246	44.0	0.850	30.0	0.057	2.0	0.014	0.5	0.014	0.5	0.014	0.5	17
18			1.133	40.0	0.906	32.0	0.057	2.0	0.014	0.5	0.014	0.5	0.014	0.5	18
19			0.935	33.0	0.821	29.0	0.028	1.0	0.014	0.5	0.014	0.5	0.014	0.5	19
20			0.906	32.0	0.963	34.0	0.028	1.0	0.014	0.5	0.014	0.5	0.014	0.5	20
21			1.076	38.0	0.906	32.0	0.028	1.0	0.014	0.5	0.014	0.5	0.014	0.5	21
22			0.566	20.0	0.651	23.0	0.028	1.0	0.014	0.5	0.014	0.5	0.014	0.5	22
23			0.935	33.0	0.793	28.0	0.028	1.0	0.014	0.5	0.014	0.5	0.014	0.5	23
24			0.850	30.0	0.850	30.0	0.014	0.5	0.014	0.5	0.014	0.5	0.014	0.5	24
25			0.821	29.0	0.935	33.0	0.014	0.5	0.014	0.5	0.014	0.5	0.014	0.5	25
26			0.793	28.0	2.011	71.0	0.014	0.5	0.014	0.5	0.014	0.5	0.014	0.5	26
27			1.303	46.0	0.935	33.0	0.014	0.5	0.014	0.5	0.014	0.5	0.014	0.5	27
28			1.133	40.0	0.850	30.0	0.014	0.5	0.014	0.5	0.014	0.5	0.014	0.5	28
29			0.963	34.0	0.651	23.0	0.014	0.5	0.014	0.5	0.014	0.5	0.014	0.5	29
30			0.935	33.0	1.218	43.0	0.014	0.5	0.014	0.5	0.014	0.5	0.014	0.5	30
31					1.076	38.0			0.014	0.5	0.014	0.5			31
MEAN			1.080	38.1	1.016	35.9	0.225	8.0	0.014	0.5	0.014	0.5	0.014	0.5	MEAN
DAM^3			2797.		2719.		583.		38.		38.		37.		DAM^3
AC-FT				2268.		2204.		473.		31.		31.		30.	AC-FT

SUSAN RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 57

WILLOW CREEK NEAR SUSANVILLE

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1	1.274	45.0	0.396	14.0	0.481	17.0	0.280	9.9	0.269	9.5	0.263	9.3	0.266	9.4	1
2	1.189	42.0	0.425	15.0	0.453	16.0	0.278	9.8	0.272	9.6	0.263	9.3	0.263	9.3	2
3	1.218	43.0	0.425	15.0	0.453	16.0	0.283	10.0	0.269	9.5	0.263	9.3	0.263	9.3	3
4	1.246	44.0	0.340	12.0	0.453	16.0	0.283	10.0	0.266	9.4	0.263	9.3	0.266	9.4	4
5	1.246	44.0	0.340	12.0	0.453	16.0	0.278	9.8	0.263	9.3	0.263	9.3	0.263	9.3	5
6	1.246	44.0	0.368	13.0	0.510	18.0	0.272	9.6	0.263	9.3	0.263	9.3	0.263	9.3	6
7	1.246	44.0	0.368	13.0	0.566	20.0	0.272	9.6	0.261	9.2	0.263	9.3	0.263	9.3	7
8	1.218	43.0	0.425	15.0	0.566	20.0	0.266	9.4	0.261	9.2	0.263	9.3	0.269	9.5	8
9	1.161	41.0	0.453	16.0	0.538	19.0	0.261	9.2	0.263	9.3	0.263	9.3	0.272	9.6	9
10	1.104	39.0	0.453	16.0	0.510	18.0	0.272	9.6	0.275	9.7	0.263	9.3	0.272	9.6	10
11	1.076	38.0	0.510	18.0	0.538	19.0	0.283	10.0	0.272	9.6	0.263	9.3	0.269	9.5	11
12	1.048	37.0	0.510	18.0	0.538	19.0	0.283	10.0	0.266	9.4	0.263	9.3	0.261	9.2	12
13	1.048	37.0	0.510	18.0	0.566	20.0	0.283	10.0	0.263	9.3	0.263	9.3	0.266	9.4	13
14	1.020	36.0	0.481	17.0	0.538	19.0	0.280	9.9	0.263	9.3	0.255	9.0	0.266	9.4	14
15	1.020	36.0	0.481	17.0	0.510	18.0	0.261	9.2	0.263	9.3	0.263	9.3	0.269	9.5	15
16	1.020	36.0	0.453	16.0	0.481	17.0	0.263	9.3	0.263	9.3	0.255	9.0	0.269	9.5	16
17	1.020	36.0	0.453	16.0	0.453	16.0	0.261	9.2	0.263	9.3	0.252	8.9	0.272	9.6	17
18	0.991	35.0	0.453	16.0	0.425	15.0	0.263	9.3	0.269	9.5	0.252	8.9	0.269	9.5	18
19	0.991	35.0	0.453	16.0	0.396	14.0	0.263	9.3	0.269	9.5	0.252	8.9	0.272	9.6	19
20	0.991	35.0	0.453	16.0	0.368	13.0	0.261	9.2	0.266	9.4	0.258	9.1	0.272	9.6	20
21	0.935	33.0	0.453	16.0	0.340	12.0	0.261	9.2	0.272	9.6	0.258	9.1	0.272	9.6	21
22	0.906	32.0	0.453	16.0	0.312	11.0	0.261	9.2	0.266	9.4	0.255	9.0	0.272	9.6	22
23	0.935	33.0	0.453	16.0	0.312	11.0	0.263	9.3	0.263	9.3	0.252	8.9	0.272	9.6	23
24	0.935	33.0	0.425	15.0	0.312	11.0	0.261	9.2	0.263	9.3	0.255	9.0	0.275	9.7	24
25	0.850	30.0	0.396	14.0	0.312	11.0	0.263	9.3	0.255	9.0	0.255	9.0	0.272	9.6	25
26	0.481	17.0	0.396	14.0	0.283	10.0	0.269	9.5	0.255	9.0	0.261	9.2	0.269	9.5	26
27	0.425	15.0	0.453	16.0	0.283	10.0	0.269	9.5	0.255	9.0	0.263	9.3	0.269	9.5	27
28	0.425	15.0	0.510	18.0	0.283	10.0	0.269	9.5	0.263	9.3	0.266	9.4	0.269	9.5	28
29	0.425	15.0	0.510	18.0	0.283	10.0	0.269	9.5	0.263	9.3	0.269	9.5	0.266	9.4	29
30	0.396	14.0	0.481	17.0	0.280	9.9	0.269	9.5	0.263	9.3	0.269	9.5	0.263	9.3	30
31	0.396	14.0			0.280	9.9			0.263	9.3	0.266	9.4			31
MEAN	0.951	33.6	0.443	15.6	0.422	14.9	0.270	9.5	0.265	9.3	0.261	9.2	0.268	9.5	MEAN
DAM^3	2545.		1147.		1129.		699.		708.		698.		695.		DAM^3
AC-FT		2064.		930.		915.		567.		574.		566.		563.	AC-FT

SUSAN RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 58
OPERATION OF McCOY AND HOG FLAT RESERVOIRS

DAY	McCoy Flat Reservoir Inflow from Susan River						McCoy Flat Reservoir Releases to Susan River				Hog Flat Reservoir Releases to Susan River		DAY
	APRIL		MAY		JUNE		MAY		JUNE		MAY		
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.708	25.0	0.113	4.0			2.889	102.0			1
2			0.708	25.0	0.057	2.0			2.860	101.0			2
3			0.793	28.0	0.028	1.0			2.832	100.0			3
4			0.850	30.0	0.028	1.0			2.804	99.0			4
5			1.048	37.0	0.028	1.0			2.747	97.0			5
6			1.076	38.0	0.014	0.5			2.662	94.0			6
7			0.935	33.0					2.605	92.0			7
8			0.850	30.0					2.520	89.0			8
9			0.850	30.0					2.520	89.0			9
10			0.736	26.0					2.436	86.0			10
11			0.680	24.0					2.436	86.0			11
12			0.651	23.0					2.266	80.0			12
13			0.708	25.0					1.982	70.0	1.444	51.0[3]	13
14			0.850	30.0					0.821	29.0[4]	1.303	46.0	14
15			0.935	33.0					0.057	2.0	1.189	42.0	15
16			0.991	35.0							1.133	40.0	16
17			1.048	37.0							1.076	38.0	17
18			1.048	37.0							0.906	32.0	18
19			1.048	37.0							0.793	28.0	19
20			0.991	35.0							0.680	24.0	20
21			0.991	35.0							0.566	20.0	21
22			0.991	35.0							0.453	16.0	22
23			0.878	31.0							0.283	10.0	23
24	0.736	26.0*	0.793	28.0							0.198	7.0	24
25	0.991	35.0	0.935	33.0							0.142	5.0	25
26	0.793	28.0	0.878	31.0							0.085	3.0	26
27	0.708	25.0	0.708	25.0							0.028	1.0[4]	27
28	0.680	24.0	0.651	23.0			0.595	21.0[3]					28
29	0.708	25.0	0.538	19.0			2.917	103.0					29
30	0.708	25.0	0.368	13.0			2.889	102.0					30
31			0.227	8.0**			2.889	102.0					31
MEAN	0.177	6.3	0.821	29.0	0.009	0.3	0.300	10.6	1.148	40.5	0.332	11.7	MEAN
DAM[3]	460.		2198.		23.		802.		2973.		888.		DAM[3]
AC-FT		373.		1782.		19.		650.		2410.		720.	AC-FT

* Beginning of record
** End of record
[3] Beginning of releases
[4] End of releases

SUSAN RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 59

A AND B CANAL ABOVE LAKE LEAVITT

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1			0.623	22.0	0.312	11.0	2.152	76.0							1
2			0.595	21.0	0.396	14.0	1.982	70.0							2
3			0.340	12.0	0.340	12.0	1.897	67.0							3
4			0.028	1.0	0.198	7.0	1.841	65.0							4
5			0.028	1.0	0.198	7.0	1.954	69.0							5
6	2.464	87.0*	0.028	1.0	0.595	21.0	2.124	75.0							6
7	3.002	106.0	0.028	1.0	1.388	49.0	2.124	75.0							7
8	3.342	118.0	0.255	9.0	1.728	61.0	2.237	79.0							8
9	3.002	106.0	0.312	11.0	1.558	55.0	2.181	77.0							9
10	2.436	86.0	0.368	13.0	1.473	52.0	2.096	74.0							10
11	2.181	77.0	0.227	8.0	1.388	49.0	2.039	72.0							11
12	2.549	90.0	0.198	7.0	1.218	43.0	1.954	69.0							12
13	2.577	91.0	0.396	14.0	0.765	27.0	1.841	65.0							13
14	2.549	90.0	0.595	21.0	1.218	43.0	1.728	61.0							14
15	2.747	97.0	0.736	26.0	1.473	52.0	1.303	46.0							15
16	2.379	84.0	0.736	26.0	2.237	79.0	0.708	25.0							16
17	2.464	87.0	0.453	16.0	2.039	72.0									17
18	1.897	67.0	0.312	11.0	1.558	55.0									18
19	1.473	52.0	0.340	12.0	1.388	49.0									19
20	1.218	43.0	0.340	12.0	1.189	42.0									20
21	0.821	29.0	0.396	14.0	0.906	32.0									21
22	0.453	16.0	0.340	12.0	0.765	27.0									22
23	0.312	11.0	0.340	12.0	0.708	25.0									23
24	0.255	9.0	0.368	13.0	0.566	20.0									24
25	0.198	7.0	0.227	8.0	0.765	27.0									25
26	0.198	7.0	0.198	7.0	0.340	12.0									26
27	0.396	14.0	0.255	9.0	0.453	16.0									27
28	1.048	37.0	0.425	15.0	0.396	14.0									28
29	1.189	42.0	0.368	13.0	0.765	27.0									29
30	1.048	37.0	0.396	14.0	1.784	63.0									30
31	0.765	27.0			1.841	65.0									31
MEAN	1.386	48.9	0.342	12.1	1.030	36.4	1.005	35.5							MEAN
DAM[3]	3709.		885.		2758.		2604.								DAM[3]
AC-FT		3007.		718.		2236.		2111.							AC-FT

* Beginning of record

SUSAN RIVER WATERMASTER SERVICE AREA
1979 Daily Mean Discharge

TABLE 60

SUSAN RIVER AT CHAPPIUS LANE

DAY	MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	m^3/s	ft^3/s	
1	0.283	10.0	0.566	20.0	0.595	21.0	0.736	26.0	0.142	5.0					1
2	0.283	10.0	0.510	18.0	0.538	19.0	0.623	22.0	0.142	5.0					2
3	0.283	10.0	0.538	19.0	0.453	16.0	0.538	19.0	0.142	5.0					3
4	0.283	10.0	0.736	26.0	0.538	19.0	0.566	20.0	0.142	5.0					4
5	0.283	10.0	1.020	36.0	0.680	24.0	0.680	24.0	0.142	5.0					5
6	0.283	10.0	1.161	41.0	1.246	44.0	0.623	22.0	0.142	5.0					6
7	0.283	10.0	1.218	43.0	1.246	44.0	0.623	22.0	0.142	5.0					7
8	0.283	10.0	1.048	37.0	1.048	37.0	0.566	20.0	0.142	5.0					8
9	0.283	10.0	0.821	29.0	0.680	24.0	0.481	17.0	0.142	5.0					9
10	0.255	9.0	0.736	26.0	0.595	21.0	0.396	14.0	0.142	5.0					10
11	0.227	8.0	0.595	21.0	0.595	21.0	0.368	13.0	0.142	5.0					11
12	0.198	7.0	0.566	20.0	0.481	17.0	0.312	11.0	0.142	5.0					12
13	0.170	6.0	0.227	8.0	0.680	24.0	0.255	9.0	0.142	5.0					13
14	0.142	5.0	0.396	14.0	0.821	29.0	0.227	8.0	0.142	5.0					14
15	0.113	4.0	0.396	14.0	0.963	34.0	0.227	8.0	0.142	5.0					15
16	0.113	4.0	0.566	20.0	0.566	20.0	0.227	8.0	0.113	4.0					16
17	0.113	4.0	0.765	27.0	0.340	12.0	0.227	8.0	0.113	4.0					17
18	0.113	4.0	0.821	29.0	0.396	14.0	0.227	8.0	0.113	4.0					18
19	0.113	4.0	0.623	22.0	0.396	14.0	0.227	8.0	0.113	4.0					19
20	0.142	5.0	0.255	9.0	0.510	18.0	0.227	8.0	0.113	4.0					20
21	0.198	7.0	0.312	11.0	0.623	22.0	0.198	7.0	0.113	4.0					21
22	0.227	8.0	0.227	8.0	0.481	17.0	0.198	7.0	0.113	4.0					22
23	0.312	11.0	0.255	9.0	0.396	14.0	0.198	7.0	0.099	3.5					23
24	0.481	17.0	0.340	12.0	0.481	17.0	0.198	7.0	0.099	3.5					24
25	0.227	8.0	0.396	14.0	0.510	18.0	0.198	7.0	0.096	3.4					25
26	0.481	17.0	0.368	13.0	0.651	23.0	0.170	6.0	0.096	3.4					26
27	0.906	32.0	0.878	31.0	0.708	25.0	0.170	6.0	0.096	3.4					27
28	0.821	29.0	0.878	31.0	0.680	24.0	0.170	6.0	0.096	3.4					28
29	0.510	18.0	0.708	25.0	0.566	20.0	0.142	5.0	0.096	3.4					29
30	0.368	13.0	0.708	25.0	1.048	37.0	0.142	5.0	0.091	3.2					30
31	0.595	21.0			1.048	37.0			0.091	3.2					31
MEAN	0.302	10.7	0.621	21.9	0.663	23.4	0.338	11.9	0.122	4.3					MEAN
DAM^3	809.		1609.		1775.		875.		326.						DAM^3
AC-FT		656.		1304.		1439.		710.		264.					AC-FT

WILLOW CREEK WATERMASTER SERVICE AREA

The Willow Creek service area is situated in Siskiyou County, about 16 km (10 mi) northeast of Montague. A map showing the Willow Creek stream system, the diversions, and the principal roads in the area is presented in Figure 21, page 225. Willow Creek is the major source of water supply and rises on the west slope of the 2 400-m (7,800-ft) Willow Creek Mountain east of the service area. It then flows in a northwesterly direction through about 18 km (11 mi) of rolling hills to its confluence with the Klamath River. The service area is about 13 km (8 mi) long by 1.6 km (1 mi) wide and varied in elevation between about 800 and 1 200 m (2,600 and 4,000 ft).

Basis of Service

Willow Creek has had a long history of litigation. However, the present basis of service might be said to have been initiated in 1949 when a civil suit was referred to the Department of Public Works, Division of Water Resources, to act as referee. The matter was never finalized by a decree. The issues involved were reopened in 1971, and by Decree No. 24482, dated April 28, 1972, the Siskiyou County Superior Court appointed the Department of Water Resources to supervise distribution of water in accordance with an earlier agreement between the users defining their respective rights. Accordingly, the Willow Creek watermaster service area was created on June 22, 1972, and service began on July 1, 1972.

There are three water users in the service area. Distribution is on a fractional basis until the flow drops to a specified amount below the upper two users. At that time, the total flow is rotated between the upper two users.

Water Supply

The main source of water supply of the Willow Creek stream system is from the melting of snow which accumulates at high elevations on the drainage area during the winter months. The spring flow from the melting snow begins late in March or early April and is almost entirely gone prior to June 1. Thereafter, the flow decreases rapidly until about July 1. From that date up to the time fall rains begin, the flow remains at a more or less sustained low-flow stage sufficient for domestic and stock-watering purposes on the two upper ranches only.

Method of Distribution

Both sprinkler and flood irrigation are used in the Willow Creek service area. The upper water user has the option of using gravity diversions for either flood or sprinkler irrigation. The middle user relies entirely on runoff from the upper user's flood irrigation. Diversion is accomplished by diverting water into the ditches by temporary rock or gravel dams. The lower user in the area utilizes both flood and sprinkler irrigation during the early season when the supply is abundant. As the supply dwindles, the remaining water is pumped from a sump to the sprinkler system.

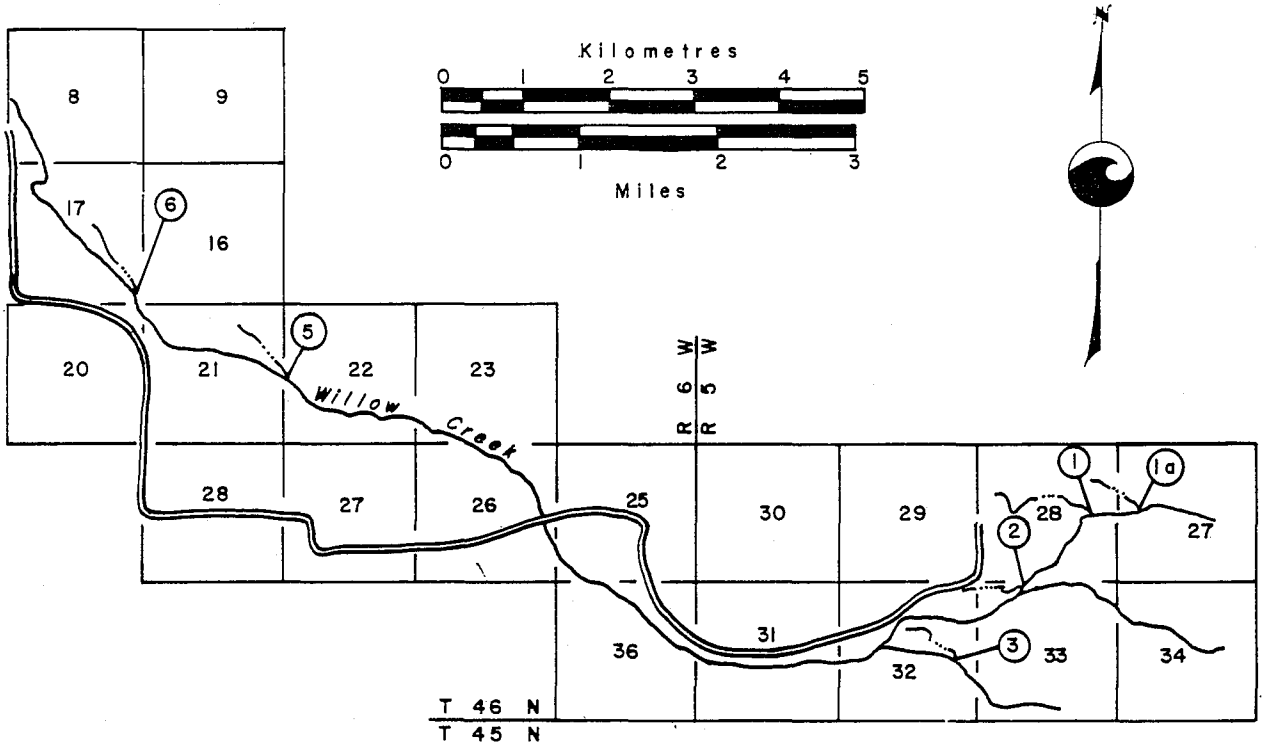
1979 Distribution

Watermaster service in the Willow Creek service area began on April 1 and continued until September 30. Lester L. Lighthall, Water Resources Technician II, was watermaster during this period.

Watermaster service began in 1972 on this creek. Our eight years of record of the starting date for rotation is July 15. This year's supply was well below average as the starting date was June 15.

There was sufficient water to distribute to all three users according to their fractional allotments until the middle of June; then distribution was started on a five-day rotation between the two upper suers, since the lower user could no longer put his allotment to beneficial use. This rotation was continued for the remainder of the season.

Figure 21.



Diversion Number	
1	Underwood and Sylva
1a	Underwood and Pipeline
2,3	Sylva
5,6	Cook

Underwood, Sylva, and Cook may divert 1/6, 1/6, and 2/3 of the flow respectively, except when the flow below Sylva Ranch is less than ten (10) inches on the gage, between July 1 and October 15. During such times Underwood and Sylva each may divert the full flow for alternating five day periods.

Note: Other diversions exist outside the service area.

DIVERSIONS FROM WILLOW CREEK
WILLOW CREEK WATERMASTER SERVICE AREA